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ORIGINAL ARTICLES

OLD LAMPS FOR NEW*

BY WALTER WILLIAM CHIPMAN, M.D.

Members of The New Hampshire Medical Society, Ladies and Gentlemen:

You are a distinguished Society concerned with the welfare of this community. It is a great pleasure to meet you.

It has often occurred to me to wonder whether we Americans are a speech-loving people. All speeches of whatsoever kind should be short.

This should obtain of all speeches. The advice to any speaker is to be brief.

It is in this spirit that I shall say something to you on New Lamps—"New Lamps for Old." You may wonder at this title: it has one redeeming virtue.

By the New Lamps I mean, the new friends, the new thoughts, the new manners, the new things that replace the old—the Old Lamps in our world today. This gradual change of the old for the new is imperative and inevitable if we are to live in the world and be part and parcel of it. But I take it that the true issue of the business, the profit or the loss of the transaction is not so much the exchange, but the manner in which this exchange, this addition and subtraction, is made by each of us. Things are not better merely because they are new, any more than other things are worse because they are old. We know that age improves many things, both of the body and the spirit (or spirits). Old friends are best, and in the average life-time, we cease to make them after thirty. No, it is rather the manner of the exchange, the individual control of it that counts. Not in any of our lives should there be always a feverish anxiety to discard the old, and seize the new; unmindful of the intrinsic value of the old, and that it may really represent the greatest treasure that we can possess.

New Lamps for Old is really a plea for a personal and careful estimate of intrinsic values; for an individual and sober judgment of men and things; a taking thought that we are not the losers from this daily or this annual bargain.

You all doubtless remember the story of Aladdin and his Wonderful Lamp, the Wonder-working Lamp, old and well-worn as it was; and how through its power he built the palace and married the princess. And then the subterfuge of the wicked magician to obtain possession of this old lamp by calling out before the palace his offer to exchange his new lamps for any old ones. And the princess, remembering the old lamp in Aladdin's room, hurried out to the magician, and glady exchanged it for one of the bright new ones. And she was at first so proud of her bargain, and then you remember the dire results. What a disastrous barter she really made!

The moral of this story really is that there should be no sudden, and no thoughless surrender of the old, merely because it is old, or a hurried and reckless seizure of the new simply because it is new. The one or the other may be the better or the worse; and any exchange should only be made after a careful estimate of the bargain. Moreover, it is well for us to remember that the new in many things is after all not so new, for we are truthfully told that the future is but the past entered through another door. Archibald McMechan, Professor of English at Dalhousie University, puts this in another way when he says that, "a society or a people that is unmindful of its past can have no future."

And what are the Old Lamps in this America of ours? I confess for a certain fondness and admiration for them—though this may be but an indication of advancing age on my part. These Old Lamps are the older things, the older home-life, with its manners and traditions, the older training and education, and the older means and methods. I think it is not too much for us to say that our forbears were, for the greater part, an honorable folk. . . . Their family ties were strong, they were frugal and industrious, with a high appreciation of spiritual and intellectual things. Self-educated for the greater part, they were ambitious for their children, and a rigorous self-denial was often the hallmark of our education. They gave us a good physique, and they saw to it that a sound mind was placed above a healthy body. And this has been the nature of our inheritance. Each one of us in this room today can recall these things. He can go back to his own beginnings in time

*Address at the banquet of the 135th anniversary of the New Hampshire Medical Society at Concord, N. H., May 26, 1926.

and place, and to the care and affection that surrounded him; the affection perhaps a little austere—children were then to be seen and not too often heard—and to the family discipline of that early life. For some of us this home was on a farm, where boys and girls were taught to use their hands, and where there was engendered in the young soul a love of the open and the sky. In parenthesis may I say, and I think you will agree, that country life is good for children, and that each and every child should have something of it prescribed as part of his education.

The Bible, Shakespeare, Milton, Scott, and Dickens—this was the literature of the home-life; these the fine Older Lamps of Literature. There are none better, and no Newer Lamps of which we know can take their place. There is no question that a taste for these things, for such a literature, may be early acquired, may only be truly acquired in a home where a taste for it is; and we know that taste is developed and grows on what it feeds on—even a taste for tomatoes! And the schools and universities of that time, small often and poorly-equipped, reinforced these things, and taught the growing child at least some knowledge of his own language, and a regard and respect for the humanities.

These are a few of the old, the well-worn lamps in this country of ours, which have been a light to the feet of our generation. For the greater part, they have served us well, and I think we do wisely to measure and estimate their value—the value of them all—before we hurriedly exchange them. We must not standardize too much. In my judgment, the light of these Old Lamps, made for intrinsic growth—a growth within. They fostered character, and an individual self-reliance and content. I need not remind you that true happiness and true success in life lie only within the mind itself.

Now, in our generation we have travelled far, and beyond all dispute many a New Lamp has been added to our old illumination. Many of these New Lamps are of value and are thankfully to be received; for in place of the tallow candle and kerosene, they represent an electrical incandescence. Not only have we travelled far, but we have travelled fast in this commercial and industrial age. Rapid motion and locomotion, everywhere the God of the Machine—the machine that whirls us to and fro, or round about. Caught in this dizzy maelstrom, there is a risk that we lose our feet; in fact, both head and feet. Scarce chance to breathe, there is time neither to read nor think, while the Older Lamps are dimmed and forgotten.

Speaking of this danger in our modern life, Dr. Charles Gray Shaw, Professor of Philosophy in New York University, ironically suggests that in this inventive age, he would give a prize of a million dollars for the invention of a good reason for living. In the hectic fevered days of the life of our modern cities, he names seven deadly values, and these are:—Speed, Radio, Love, Health, Entertainment, Complexes, and Money. And there is something in what this Professor says, though I admit that an academic education is no guarantee for common-sense.

Speaking of speed—steam, electricity, and gasolene—he declares that mere speed tends to whip us into a condition wherein we think only of covering the greatest amount of space in the shortest time. The question is, not where we are going, or why; but how fast can we get there. In the words of the old darkey divine, "I don't know where I'm goin', but I know I'm on my way."

Of radio he tells us that it isn't what we hear that we value, but at how great a distance we can get it. And then of the 20th century love-values, which are advertised on every bill-board, electric-sign, in every newspaper, book, and magazine, it is "Sex über alles", where the movie-actor is a cross between a cave-man and a Sheikh.

For our health's sake we are warned to diet ourselves with vitamines, and are questioned particularly about our breakfasts. We are told that our troubles are due to our teeth or want of teeth, and compared to the old-timers who simply lived and knew nothing about diet and dentistry we are out now to break the record of Methusaleh—and he wonders why!

In the mad rush of perpetual entertainment Professor Shaw asserts that we must always be entertained whether we enjoy it or not, tired business-men and weary business-women. "The play's the thing," or movies, or jazz, or bridge, or golf—anything provided we escape the dire calamity of being compelled to sit still, to read or to think.

And then there are the "Complexes"—the psychological explanation of all human conduct. No longer is the man a saint, a plain liar, or thief, but rather is he ego-centric, or a kind of superman with a Superiority Complex. In the word of Professor Shaw, we are indeed badly "psyché-d".

Speaking of money, he tells us that our worship of wealth has one great anxiety and weakness—and this is, our fear of the two-dollar bill. In his own words "we now value money for money's sake, the signs of the times are dollar signs, the great man is Dives, the great god—Mammon."

I think you will agree that these "values" represent some of the dangers of our modern life. I know it is always natural for a man or a woman to criticise and to quarrel with the manners and the matters of his own time. Undoubtedly, the above picture is overdrawn, is something of a caricature; and yet it shows sufficient truth to enable us to recognize it. The trouble is with our newly-gotten gains, and

our extreme democratic ways—our new and rich democracy—Jack is not only as good as his master. In our new, young democracy of which we boast, we do well to remember, in the words of Kipling, that "morning never tries you till the afternoon."

Now it is quite true that we are all born to believe that a true democracy is the highest form of social or political life; but we are rapidly coming to learn that such democracy has the inherent quality, the weakness or the strength, of demanding a great deal from the average man. It demands a lot from the average citizen—the man in the street; and the most of us are only average. It cost us something, we remember, to make the world safe for democracy; now the much larger task confronts us of making democracy safe for the world. Nicholas Murray Butler, President of Columbia University, clearly enunciates these views in an address entitled, "The Discontent with Democracy." Speaking of the political life of America he says, "We Americans have created so much government machinery that we cannot get any effective governmental product"; and then pertinently he adds, "progress in Government is a matter of deeds and not of phrases." Let us pray to be delivered from the shibboleth of mere talk; too good a talker is too often good for nothing else. This is the burden of his plea for an enlightened commonwealth, and it is an enlightened commonwealth that we Americans desire—a commonwealth enlightened by a right and sane proportion of the Old Lamps and the New, the rich effulgence of the Old merged with and made brighter by the New. . . . The old lamps of the home-life, the early training and education, must be kept trimmed and bright; to these we may superadd all Newer Lamps of Technical School and Science College. Ours is a Scientific Age—and it is due to ourselves to make the most of it.

And we do not forget our women folk; for in all this they share and share alike; or more truthfully perhaps, theirs is the greater glory, for they make the home—or fail to make it. Nellie M. Lung lately admonished her working sisters by telling them that the best of food—and especially for children—is not in tins; that the maker of a home must be something more than a can-opener! We argue then for the proper birth-right, the training and the education of the average individual, the man in the street, the average man and woman. We may transpose a little the words of Kipling's McAndrew, and say "We have no doubt of our country" and its great possibilities: but what about the man, what about his industry, his present judgment and foresight? We pray that a right conjunction of the Old Lamps and the New may be a light unto his path, for the destiny of our country is in his hands.

And Medicine has her part to play in this responsibility; her part to combine the Old Lamps with the New. We are told by Dr. T. C. Routley that, during the last decade, the average lifetime has been lengthened some 13 years—from 45 to 58. This is good hearing, if these added years prove to be years of usefulness. Rightly enough, Dr. Routley ascribes this average longevity to Medical Science and to Medical Art, to improved methods of sanitation and hygiene: in a word, to Preventive Medicine.

Our medical men are a good company and our medical sons should be carefully chosen in the matter of intelligence, character, and physique; they should be well and soundly trained, so that in the end each one may become a good citizen, good at his work, ripened in wisdom, walking as a physician. We admit the truth that there is no royal road to knowledge, in theory or in practice, and it is immeasurably more true that there is no short proprietary road to this same thing. There is no short cut, in fact there is no reason or excuse for irregular and half-baked methods. Among a people of common-sense there is no room for the charlatan or quack. We inevitably create our own standards, and these are of first importance in Medical Education. It is undoubtedly true that the story of Medicine really includes and embraces the whole history of mankind. For the "Know thyself"—the behest of the Delphic Oracle was, in reality, only the impassioned cry of the human race become at last articulate. This "knowledge of self" this understanding of ourselves, mental, moral, and physical, as we arbitrarily divide it, is related fundamentally to the study of Medicine. It is only by means of this study that we can "know ourselves," and, through ourselves the world outside and beyond us. Each and every child should have some training in, some knowledge of, the natural sciences; for so he obtains the self-knowledge, the beginning of all knowable things. As it was in the beginning, it is now and ever shall be, that true Science and true Religion go hand-in-hand, for they are but different aspects of the same thing. In the long exodus of the human race "from out the night, the blinding night, of ignorance and superstition," these are the agencies that have been at work; and in each there are the Old Lamps and the New.

The History of Medicine is really the narrative of man's struggle to survive, to become and to be master of himself and his surroundings, the arbiter of his own destiny. To attain, and to preserve a sound mind in a sound body is the very crux of the conflict. Disease and death are on every side, and in consequence this effort of life is a strenuous and unremitting one. Immediately before us today is a new world, or a new phase of the old one, the world of Preventive Medicine—to be lighted with New Lamps,

a new world to conquer. When the whole of the story is written, sanitation with its accompanying hygiene, physical, mental, and moral, will take its place among the great revolutions of the world; we are living now in the midst of this.

And now may I say a word of the New Lamps of Social Service; for this is a popular and most important aspect of Preventive Medicine. It is a world-wide attempt to keep the people better and to make of this earth a happier place to live in. "A general welfare" is the slogan of the movement, and the attempt is toward a social "uplift," if you like that term.

Naturally enough, it is the two extremes in the economic scale that need most this reformation. At one extreme there are the poor, they are always with us; and, furthest removed from these there are the rich—I mean, the idle and luxurious rich. The effort should always be to establish between these two extremes a better adjustment or a proper balance. Among the poor, it is largely a question of a living wage; and, having scarcely bread to eat, there is little else in all their lives than the daily struggle to escape starvation. While among the rich, I say again the idle thoughtless rich, satiety early writes its wrinkles upon the blasé and discontented face. Social service, if it means anything, must bring these two extremes together. The rich and the poor must meet, and in this meeting gain for themselves a mutual salvation.

There underlies all this the basic problem of economics, complicated by the various complexities of our modern life. It is no easy problem, and there is urgent and continuous need of the person of the priest, the philosopher, the philanthropist, and the physician. Even in our America, what is to be said of some of the conditions found in our urban, or even in our rural life—the great industrial problem, the housing problem, the overcrowding of the cities, the standard of living, and the living wage? Perhaps the most urgent of these problems for any social service is the welfare of the women and the children. Ruskin has told us that "the worth of any civilization may be measured by what it makes of its girls"—its young women, its potential mothers. An adequate social service is really social economics, though, rightly enough its therapeutic aspect belongs to Preventive Medicine.

Will you forgive the following eunciation?—it is true. Could we but segregate the feebleminded and eradicate venereal disease, a full half of our social troubles would be cured at the beginning; and this must be done and will be done, when, at the long last we call a spade a spade, and an ostrich-like complacency is replaced by common-sense.

Health is, after all, our greatest asset, and in all the problems that confront us, Medicine has indeed a part to play in our individual and our national life.

New Lamps for Old is really a plea for the education of the individual, education of the man and woman, so that he or she may come to possess a sound judgment of the essentials of true happiness, an estimate of the higher values of life. Each one of us, in the words of St. Paul, is to prove all things, and hold fast that which is good.

HARELIP AND CLEFT PALATE

BY W. E. LADD, M.D., F.A.C.S.

THIS paper is based on a study of four hundred cases of harelip and cleft palate operated on in private practice and in the surgical wards of the Children's Hospital, Boston, by the writer, and a review of two hundred and sixty-two cases of operation by other members of the surgical staff of the Children's Hospital.

Etiology—The etiology of harelip and cleft palate is still a matter for theoretical conjecture. Amniotic bands and adhesions are considered a probable cause by some while others consider as a causative factor malnutrition and constitutional diseases. The fact is that there is no theory which seems to adequately explain the occurrence of these malformations. It is however unquestionably true that they are more common among the poorer class where good hygiene does not prevail.

Inheritance may be a factor but that it is a smaller one than has been generally believed I am convinced. Of course it is true that from foreigners recently arrived in this country it is difficult to obtain an adequate family history. There may be a moderate number of cases among them which have an hereditary bearing that is not discovered. But in my patients of the better educated class who know about their ancestors for several generations, it is certainly the exception, not the rule that heredity plays a part. This is in great contrast to the hereditary bearing in some other malformations such as syndactylism in either hands or feet. In these cases the reverse is true it being very common to find this condition directly inherited.

That maternal impressions have any bearing whatsoever on the occurrence of these malformations is difficult to conceive, yet it is interesting to note that this is a very common belief

among all classes of patients. The idea may possibly arise from the story told in Genesis of Jacob and Laban, where Jacob caused the offspring of his flocks to be born speckled by put-

FIG. 1. Median harelip.

ting ringstraked rods before the cattle when they conceived.

Sex—In this series of cases the male predominates in the proportion of 59 per cent to 41 per cent. This corresponds well with the observations of other surgeons.

Type—I have found in my cases that 55 per cent occur on the left side, 29 per cent on the right side and 16 per cent double. One patient lacks the intermaxillary bone. (Fig. 1). This means that 65 per cent of single lips occur on the left side giving left harelip a slightly lower predominance than is reported by Brophy, 75 per cent of his cases occurring on the left side. If the view that amniotic bands have any bearing on the etiology, is correct, it is difficult to understand how it could select one side over the other in such large proportion.

Treatment—Age for operation—There is considerable diversity of opinion as to the most desirable age for operation on harelip and cleft palate. There is also considerable discrepancy in opinion as to the sequence of the operation some surgeons preferring to operate on the lip first while others give the palate operation priority. Sir Arbuthnot Lane recommends doing his type of palate operation as soon after birth as possible. In a man of Lane's technical skill this may be desirable but it has not proved to be so in the hands of many surgeons in this country. We never do the Lane operation because we do not get good functional results from it. The broad surface of scar tissue left by the wide flap shortens the palate to such an extent in my hands at least that speech defect remains very marked. This is apparently a difficulty which is common to many surgeons doing this type of work.

Brophy advocates the palate operation between the third week and the fourth month. With Brophy's large experience it would seem unwise to question his selection of time providing one adopts his type of operation. That he has been very widely misunderstood, however, on the amount of operation that he does on cleft palate at this age, I am convinced. Many surgeons have attempted to close the whole cleft palate at this age thinking that they were following Brophy's teaching. which is entirely contrary to fact. I am sure that this has given a higher mortality and many unfortunate results. Brophy's primary operation is only in-

FIG. 2. Patient 26 years old who had never had any attempt at repair.

tended to narrow the cleft, to unite the alveolar line and to close the mucous membrane of the very front end of the hard palate. I am sure that he would disapprove as I do of attempting to close the whole palate in the first operation at this early age.

Brown recommends closure of the lip within the first few days after birth when practicable. When this is not practicable he recommends ad-

hesive strapping to narrow the cleft until such time as the operation can be done. His reasons for this early operation on the lip are that it prevents widening of the fissure and that the newborn infant sleeps so much of the time that there is very little tendency to disturb the sutures.

Blair is an advocate of very early operation on the palate and has followed the principles of Brophy's operation but with modification of the technique. He states that he has recently omitted the posterior lead plates and has obtained equally satisfactory results by passing one wire through the anterior portion of the jaw and around in front of the intermaxillary bone. He also advocates closure of the lip at this time but apparently does not agree with Brophy that in closing the front end of the bony defect one widens the posterior cleft of the palate. His

FIG. 3. Postoperative view of case shown in Fig. 2.

reasons for doing the early operation with closure of the lip are that it establishes nasal breathing which is an important factor in the health of the child and that young infants stand one operation remarkably well but do not stand the second operation if done within a few weeks, nearly as well.

It can readily be seen from the above statements that there is not general agreement as to the choice of age for operation or whether the lip or palate should be done first. It seems to the writer that there are perfectly logical reasons for the decision as to which operation should have priority and for the selection of time at which it should be done. The restoration of the alveolar line is obviously an essential for an adequate operation on the lip. The first procedure, therefore, is to push the intermaxillary bone into its proper position. The

FIG. 4. Complete type of single, left-sided harelip.

FIG. 5. End result of lip shown in Fig. 4 18 months later.

younger the patient the easier it is to accomplish this. As a practical matter it rarely means that the operation can be done much before the third week. On account of the difficulty of transporting the mother and infant to the hospital it is only occasionally that the operation may be done earlier. The lip is repaired at the

same time that the intermaxillary bone is put in line. As Blair states, the reason for this is to restore nasal breathing and also to relieve the anguish of the mother. Of more importance than either of these is to obviate the necessity of leaving a silver wire imbedded in the bone for a long period of time. At the time of this operation the mucous membrane of the edges of the very front end of the cleft may be elevated and approximated with one or two stitches.

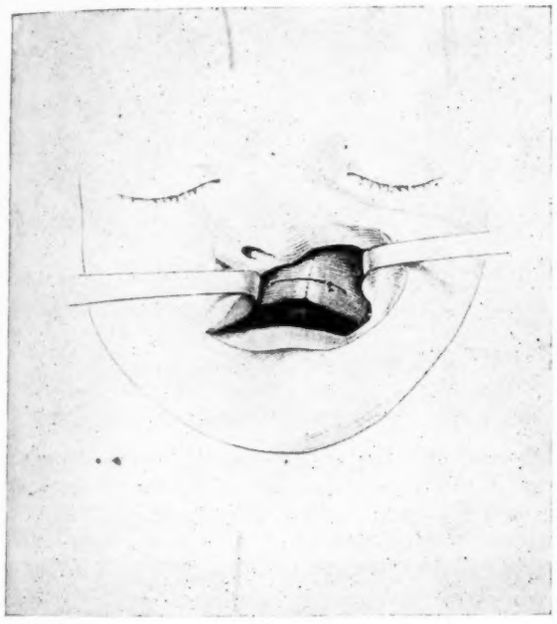

FIG. 6. First step in operation: Cheek freed on either side of defect: Alveolar line restored and held with silver wire placed between tooth sacs.

The operation can be very easily done up to the third or fourth month but there is nothing to be gained by waiting this long and the chance of the infant not thriving is sufficiently great to make it undesirable to wait. After five or six months the voma maxillae and the intermaxillary bone become ossified so that molding of them is difficult and from that time on operation becomes increasingly complicated. It can of course be done at any age and I have had a few patients who have reached adult life with whom I have obtained satisfactory results. (Figs. 2 and 3.)

The time of choice for the palate operation is from eighteen months to two years. The reasons for this selection are that up to this time one gains a certain amount of narrowing of the cleft, both from the first operation and from the growth of the parts. It is at a time before the child has made much effort at speech and consequently they begin talking with a restored palate. If one delays the operation longer the child widens the cleft in the soft palate by his efforts to talk. If one operates much earlier the full benefit of growth is not obtained. The selection of time for operation is of course subject to variation by the condition of the individual patient. It is of paramount importance that the infant be in good general condition;

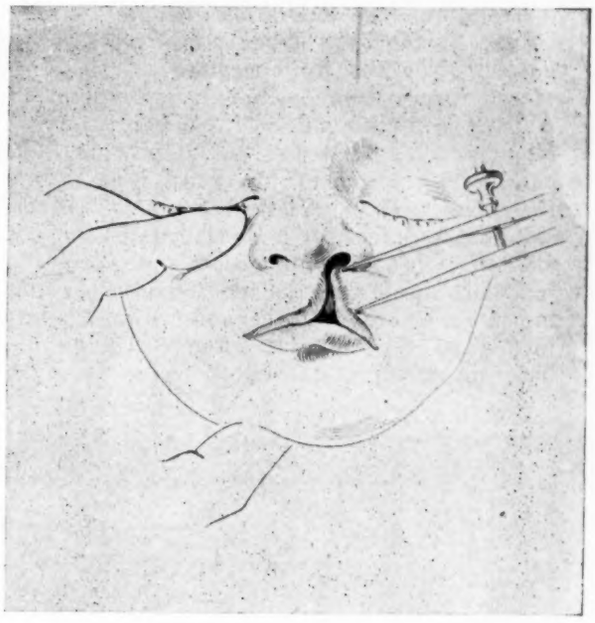

FIG. 7. Desired height of lip measured with calipers and marked on both sides as indicated.

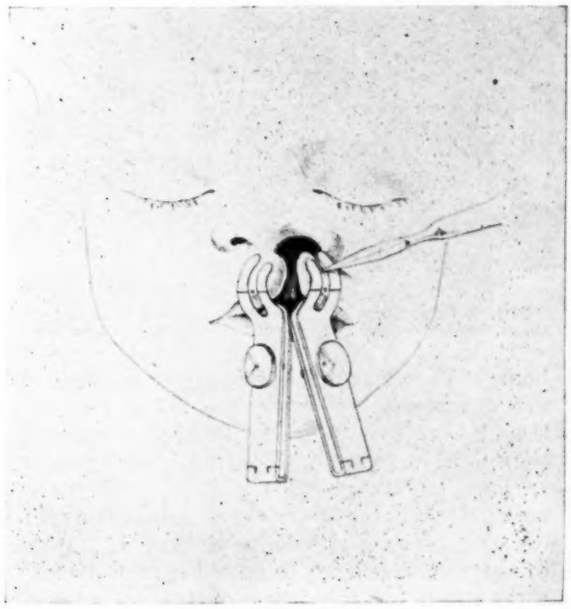

FIG. 8. Clamps applied with puncture of calipers between cross marks. Incision made with knife in slot of clamps.

that his feeding agree; that he has no upper respiratory infection or infection of the middle ear. It is wise to make sure of the absence of diphtheria by culture before operation and to be sure that the skin is in a healthy state free from such diseases as eczema and furunculosis.

It is always desirable to keep the young infants in the hospital for a day or two before the operation to ascertain their general condition and to force fluids by clysis or by rectum if there is any tendency toward dehydration.

Technique of operation—Single harelip—(Figs. 4 and 5). Ether is the anesthetic of choice. For the lip operation the patient is placed in a sitting position in the nurse's lap. A sheet containing a hole sufficiently large to allow a clear view of the lower half of the child's nose, the mouth and chin, is placed over the patient's head. The cheek is freed on either side of the defect for a short distance until the ala can be brought into proper position without tension. To do this the incision is made in the mucous membrane at the point where it is attached to the alveolar ridge. To minimize bleeding one frees the cheek from close to the

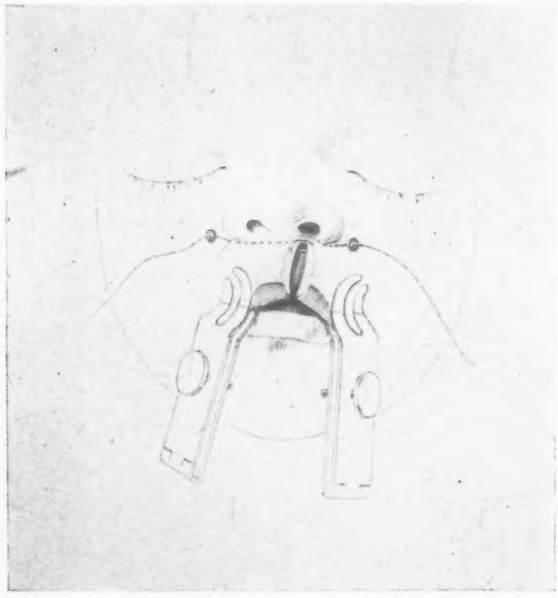

FIG. 9. Clamps applied at angle of mouth to control hemorrhage. Figure-of-eight stitch applied to approximate ala.

bone. The maxillae and intermaxillary bone are then pushed together with the fingers and thumb. It is undesirable to use instruments as they must necessarily cause an undue amount of trauma. A silver wire is then introduced between the tooth sacs and on either side of the defect and then brought around to the front of the intermaxillary bone. (Fig. 6.) While the assistant holds the front of the intermaxillary bone back in line the silver wire is twisted to hold the bony parts in apposition. Undue force should never be put on the wire as this will surely cause injury to the bone and to the teeth. The desired height of the lip is now measured off with a pair of calipers, the measurement being taken on the unaffected side from a point one half way between the ala and the septum on the floor of the nose down to the junction of the mucous membrane and the skin. (Fig 7.) This height is then marked off on either side of the defect. The clamps are applied and the incision is made in the clamps. (Fig. 8.) The clamps and calipers which are the writer's own devices, have been used at the Children's Hospital and by many other surgeons in various parts of the country, with satisfactory results. The advantages of making the incisions in the clamps are that the cut surfaces are perpendicular to the plane of the face and must be of equal length, which makes more accurate approximation possible than can be obtained in other ways. The clamps are then removed and reapplied at the corner of the mouth to control hemorrhage. (Fig. 9.) The wound is now united with interrupted silk stitches, the

FIG. 10. Incomplete left-sided harelip.

FIG. 11. End result of lip shown in Fig. 10.

first layer including all layers but the skin and tied posteriorly. These are the stitches which approximate the muscle and take any strain that may be put on the wound by action of the facial

FIG. 12. Double harelip.

FIG. 13.

muscles. For approximation of the skin very fine silk such as is made for blood vessel work, is used. This silk is sufficiently fine so that it leaves no visible, unsightly cross stitch marks. It is important to extend these stitches well up into the nostril in order to make a good floor for the anterior nares and to prevent flaring of the ala.

Post operative care—No dressing is applied to the wound. The writer has experimented with various types of applications and dressings and he has found that silver foil is the most satisfactory. None are without draw-

FIG. 14. End result of double harelip done by the Brown method except with the modification of holding the intermaxillary bone in line with a silver wire.

FIG. 15. Incomplete double harelip.

backs, however, and the best results are obtained when the wound is left uncovered. If during the first two or three hours subsequent to operation a nurse will sponge off any serum that collects with a small gauze sponge saturated with boric solution, the care of the wound during convalescence is much simplified. If there is difficulty in breathing, which very occasion-

ally occurs due to sucking in of the lower lip, a silk stitch taken through it and a small hemostat attached to the end of the thread and hung over the side of the crib, will relieve this difficulty. This may be kept in place until the child is able to breathe through the nostril. This simple device has been found much more satisfactory than the insertion of a tube. The infant is given sufficient paregoric or morphia to keep him moderately quiet, and is fed with a dropper, the most satisfactory type being a large glass dropper with an inch of rubber tubing on the end. Sterile water is given after each feeding so that milk curds will not remain in the mouth. The superficial stitches are removed on the sixth or seventh day, deep

FIG. 16. End result of lip shown in Fig. 15 done with a tuning fork incision.

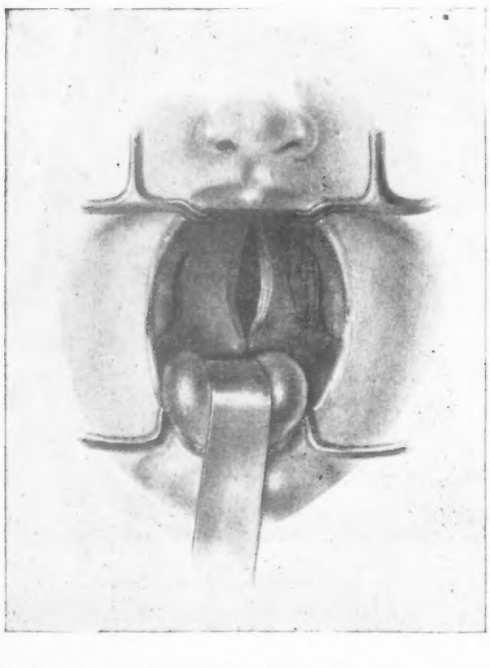

FIG. 17. Note position of posterior palatine artery and lateral incision outside of it.

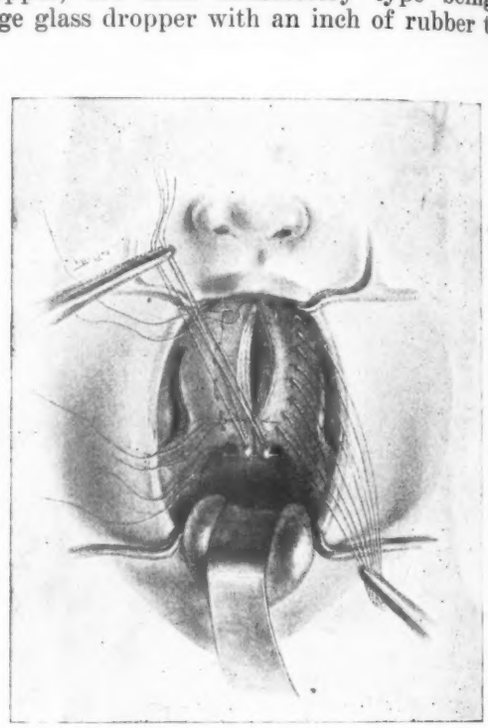

FIG. 18. Showing method of inserting mattress stitch and not tying them until the approximation stitches are placed.

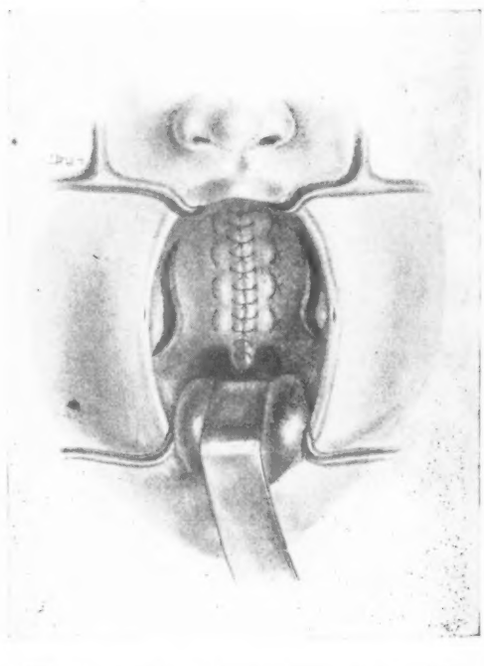

FIG. 19. Stitches tied and closure of the palate.

stitches on the eighth or ninth day and the wire on the tenth or eleventh day. It is important that the wire should not be left in any longer than is necessary as it is a foreign body introduced under conditions where perfect asepsis does not prevail and there must necessarily be

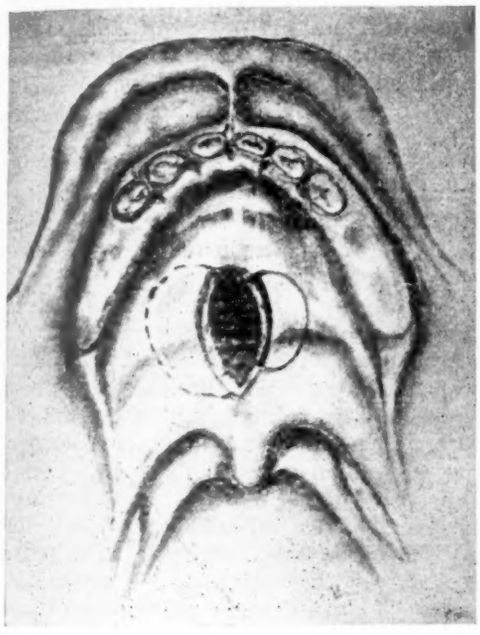

FIG. 20. Showing outline of flap to be turned and outline of flap to be undermined.

a reaction around it which may interfere with the development of the teeth or bone. This factor is one of the chief arguments against the Brophy technique. It must be clear to anyone that continued pressure of a foreign body for a period of six weeks may cause considerable damage to the tissue and should be avoided as far as possible.

Incomplete harelip in which there is no bony involvement (Figs. 10 and 11)—The operation is usually done in the same way, excepting the work on the bone, as the incisions usually have to be extended into the nares because of the flattening of the nose on the affected side or on account of the thinness of the union between the cheek and the prolabial tab. Of course where these conditions do not exist the incisions need only be carried a short distance above the defect.

Double harelip (Figs. 12, 13, 14, 15 and 16—The method employed for repairing the deformity of double harelip depends entirely on the individual case and on the size of the intermaxillary tab. In all cases, however, it is of importance to first restore the alveolar line. This is done by pushing back the intermaxillary bone and bringing the wire around in front of it and not through it, this being less likely to interfere with the proper eruption of the teeth. I have been unable to hold the intermaxillary bone in alignment sufficiently well with adhesive plaster as recommended by Brown, to be able to close the soft parts over it without putting undue tension on the suture line, which is of course contrary to the first principles of plastic surgery. Where I have seen it tried by others the results have been far from gratifying. When the intermaxillary tab is of sufficient size and after the intermaxillary bone has been placed in line the soft parts can be closed on either side just as in doing a single harelip operation. Where the intermaxillary tab is small this procedure is out of the question. We then denude the intermaxillary tab of its vermilion border and bring a flap from both sides to unite with each other underneath the intermaxillary tab. The line of union when complete resembles the shape of a tuning fork with the "U" upwards. In doing this the lateral flaps should not be too wide for if they are the lip will be high and unsightly. The after care is the same as that of a single harelip. The wire is here removed as soon as the wound is firmly united.

Cleft palate operation—Ether is the anes-

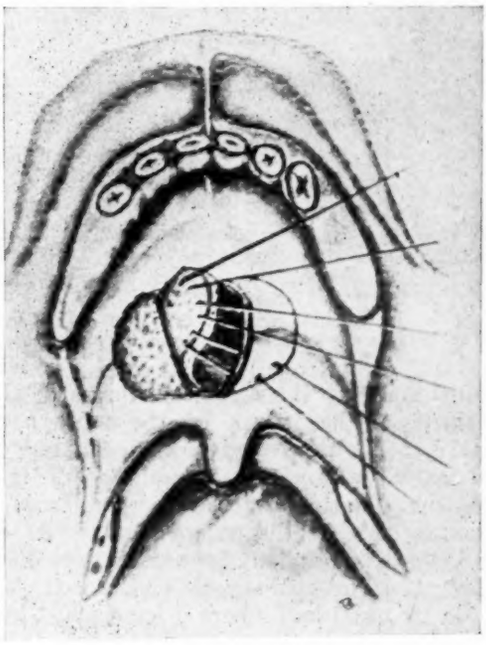

FIG. 21. Method of applying stitches to turn and tuck flap underneath.

thetic of choice for the palate operation. A vapor apparatus is used administering vapor through the mouth and not through the nose. The palate operation is done on general principles but with some modifications like that advocated by Von Langenbeck. The child is placed in Rose position, a Fillebrown mouth gag is used and a tongue stitch is inserted. An incision is first made along the free border of the cleft throughout the length of the hard palate only. No attempt is made to elevate the

muco-periosteal flap from the mid-line outwards. This is a matter of choice for the individual operator but the writer finds that he is surer of getting the whole thickness including the periosteum by elevating the flap from the lateral incision toward the mid-line. Therefore the lateral incisions are next made and extend from outside the last molar tooth of the lower jaw, forward across the commissure, inside and parallel to the alveolar ridge of the upper jaw. The incision is made close to the ridge of the upper jaw in order to avoid injury to the posterior

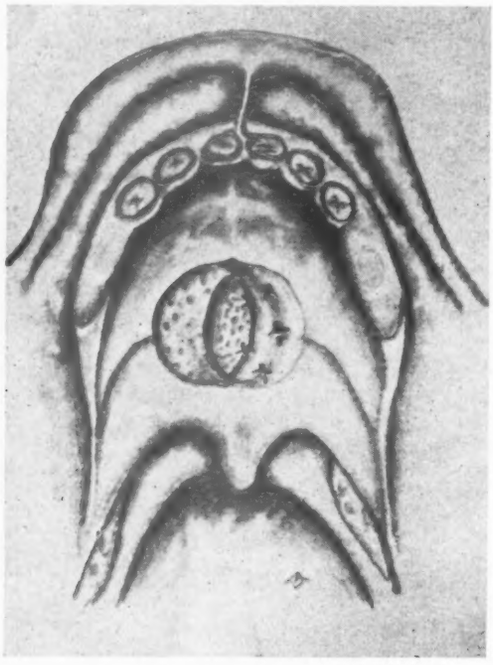

FIG. 22. Flap and stitches in place, showing wound closed.

palatine artery. It is carried forward about one third of the length of the hard palate. (Fig. 17.) The muco-periosteal flap is now elevated leaving a slight attachment at the point where the palatine artery emerges from the horizontal plate of the palate bone. The edge of the cleft is now denuded throughout its entire length. The aponeurosis of the soft palate is cut in its nasal half where it is attached to the hard palate. This allows the two halves of the palate to drop toward the tongue and to come together, on the same principle as that of a bascule bridge. The wound is now united in the mid-line by a row of interrupted mattress stitches which go through all layers, and a row of approximation stitches including the mucous membrane only. (Figs. 18 and 19.) This method of suturing everts the edges and gives a broad surface for union. The writer believes that it is more satisfactory than using any of the tension devices which have been suggested, all of which are difficult to keep clean and may interfere with the circulation unless very carefully applied.

Secondary palate operations—Secondary operations in cleft palate cases often present considerable difficulty. There have been numerous measures suggested for the closure of holes occurring as a lack of complete union after the first operation. I have found that the most effective method is by turning over a flap from one side of the hole and stitching it under a flap elevated from the opposing side, much on the same principle as the Lane operation, but this method being over only a short area, does not tend to shorten the soft palate. (Figs. 20, 21 and 22.) The technique of this procedure is well shown by the accompanying cuts. I am greatly indebted to my friend and colleague, Dr. Lyman Richards, for taking the time to watch these operations and for making the drawings of his observations.

Post operative care—Glucose by rectum is given on the operating table as a safeguard against acidosis. A sufficient amount of morphia for the first two or three days is given to limit the amount of fussing. The patient is fed with a medicine dropper and given sterile water after and in between feedings. On older children who will permit it without fussing the suture line is sprayed off with the ordinary nasal atomizer after feedings. The stitches are removed on the eighth to the tenth day.

Results—Adopting these principles of operation the mortality has not been high and compares favorably with all other statistics that I have been able to find. The mortality for harelip operation by the writer is 2.2 per cent. Of course most of these operations were done in the first two months of life, but there was a considerable number of patients operated on after one year of age with no mortality. There have been no complete failures. One per cent were partial failures, 6 per cent in which the cosmetic result was computed as fair and 93 per cent in which the result was deemed satisfactory. Of course the classification of results in this way is a matter of opinion and cannot be made accurate. A result was considered satisfactory among the private patients when both the operator and the parents were pleased, in the ward patients when the operator and the interne discharging the case thought the result good. A result was considered fair when the operator was not entirely pleased. A case was classified as a partial failure when a stitch sloughed out and consequently the wound did not unite in its entirety.

The mortality for the palate operation is 3 per cent. These deaths all occurred in the first and second year, this being the time in which most of the operations were done. There were forty-five cases after the third year and in these no mortality occurred. The advantages, however, of doing the operation early are sufficiently great and the mortality so small that it does not seem wise to postpone operation. It

is very difficult to compute the results on cleft palate work as it means following the cases for a considerable period of time in order to ascertain the function that is obtained which every one will agree is the test of the success of the palate operation. Anatomically in this series there were 88 per cent good results, 4.5 per cent of cases requiring secondary operation to close some small hole, and 3 per cent of cases requiring a complete secondary operation. I think that it would be desirable if other surgeons reported results along similar lines in order that one may have more by which to judge than mortality alone in one's selection of technique for operation.

Speech training—There are a few simple procedures which should be followed in all patients with cleft palate to facilitate their ability to talk. The first is to train the children to blow through their mouths, which develops their ability to close off the naso-pharynx. This training should be started as soon as a child is old enough to play games and can be accomplished by such simple methods as blowing soap bubbles, etc. The next most important factor is that the parents insist that the child speak slowly and say each word distinctly by itself. It is a tendency of almost all patients with cleft palate to become embarrassed if their words are not clearly understood and in their effort to hide that embarrassment one finds them hurrying, running words together and slurring over them. Aside from the simple training procedures mentioned the speech clinic with a trained elocutionist is effective. There has been such a clinic at the Children's Hospital for some years which has produced good results, but it has always been difficult to have a large attendance. The reasons for this are twofold: First, that the wide geographical distribution of patients makes good attendance impossible, and second, that there is quite a considerable number of patients whose parents consider that they speak quite well enough without any further training. These two factors limit the attendance to those who live near by and who, for one reason or another, speak less distinctly than the average. The clinic has been of considerable benefit to this group of patients.

These principles as laid out in this paper are offered to the profession not as a panacea for all the trials that come to one who does this type of work, nor to bring out much that is original, but as a logical adaptation of the work and principles of many surgeons. It gives a considerable uniformity of good results with a mortality as low as any and lower than that which many surgeons will be able to obtain if they attempt to follow some of the more complicated procedures which have been recommended elsewhere.

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PELVIC INFLAMMATION IN WOMEN*

BY I. H. NOYES, M.D., F.A.C.S.

DOUBTLESS pelvic inflammation of one type or another is seen more frequently by both the specialist and general practitioner than any other gynecological condition. It is the cause of a great deal of semi-invalidism, a large proportion of the cases of sterility and innumerable destructive pelvic operations done on women during the child-bearing period.

During the five years from July 1920 to July 1925, of the 4400 admissions to the Gynecological Department of this hospital, 820 patients or 18.6% were afflicted with pelvic inflammation in some form. Five hundred and seventy-eight were operated upon. Of this number 320 or 55.3% were rendered permanently sterile by reason of the organs removed. These figures serve to emphasize both the frequency of pelvic inflammation and the extent to which it interferes with normal function.

Most of these patients were first treated and later referred to the hospital by physicians engaged in the general practice of medicine. After their discharge from the institution they again relied upon these physicians for further treatment, advice or observation. It is evident therefore that in order for these patients to re-

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ceive the best possible care throughout the course of their disease, the general practitioner as well as the specialist must have a good working knowledge concerning the nature of the infection, its mode of spread, its natural limitations and the various methods of increasing the resistance of the tissue cells.

Pelvic inflammation might be classified according to the type of the primary invading bacteria, the more common ones being the gonococcus, the streptococcus, the staphylococcus, the colon bacillus and the tubercle bacillus; or according to the tissues or organs involved, for instance: cervicitis, endometritis, pelvic cellulitis, salpingitis, oophoritis, pelvic peritonitis and pelvic abscess; or again in a general way as specific or gonorrheal, puerperal, tuberculous and miscellaneous.

For our purposes it seems unnecessary to adhere to any particular classification or grouping as my idea is simply to discuss in a more or less general way some of the conditions which we frequently meet and which sometimes give rise to doubt in our minds regarding etiology, diagnosis, prognosis or treatment.

We will pass over the infections of the lower genital tract such as vulvitis, Bartholinitis, inflammation of the urethra and Skene's Glands and vaginitis, important though they are as foci of infection. We come then to the cervix, which on first thought might also be considered extrapelvic on account of the protrusion of its lower portion into the vagina, but when we recall to mind its anatomical position and histological structure, we realize that it can hardly be omitted from our discussion. The mucous membrane of the vagina contains but few if any glands and, in the non-pregnant adult at least, is not prone to infection. In striking contrast to this is the lining membrane of the cervical canal or endocervix. Here there exists a single layer of cells which at numerous points dip deeply into the underlying tissue to form the racemose glands of the cervix. When pathogenic organisms once gain access to the depths of these branching glands, it is very difficult to irradicate them. An infected cervix is probably the chronic focus in most of the cases of persistent vaginitis in children. Such a focus acquired during infancy or childhood but remaining latent until the occurrence of the changes coincident with puberty may explain some of the otherwise puzzling cases of cervical leucorrhea in young virgins.

It is with marriage however that the risk of infection of the cervix is so greatly increased and it is probably safe to say that no portion of the body is so frequently diseased as the cervix of the parous woman during the child-bearing period. With the beginning of marital relations it is subjected to infection not only with the gonococcus, which may still be lurking somewhere in the genital tract of the male, but also with the staphylococcus, which so frequently exists in the prostate or seminal vesicles following a protracted gonorrhea. With marriage goes also the probability of pregnancy and labor, and labor implies injury to the cervix which in turn increases the danger of infection with the bacteria always present in this region during the puerperium.

Let us consider for a moment what the results of cervical infection may be. Take the gonorrheal type for example. The infection may remain localized in the racemose glands and cause only a persistent mucopurulent discharge but we know that the gonococcus is prone to go deeper and excite a definite inflammatory reaction in the submucous layers resulting in fibrous tissue formation and consequent hypertrophy. Persistent chronic infection of the cervix is almost certain to result sooner or later in some degree of infection of the posterior parametrium which may cause backache, dysmenorrhea or menorrhagia.

The gonococcus travels upward in the genital tract by direct progression along mucous surfaces more readily than by the lymphatics or blood-stream. In this respect it differs entirely from the streptococcus. The endometrium seems to be more or less immune to direct attack from the gonococcus, except perhaps during the puerperium, possibly on account of its constantly changing character dependent upon different phases of the menstrual cycle. This is not so however with the Fallopian tubes in which gonococci readily gain a foot-hold. Here as in the cervix the pathology may be limited to the mucous lining but eventually in the majority of instances the involvement becomes more extensive and results in irreparable damage to portions of the tube wall. At operation or in the pathological laboratory this may be observed as any one of a number of conditions, for example: thickened tubes with closed ends; tubes with

open ends but with one or more small nodular thickened areas; thickened closed tubes distended with pus, commonly spoken of as pus-tubes; or thin-walled closed tubes distended with serous fluid, referred to as hydrosalpinx. It is interesting to observe the manner in which the fimbriae of the tube are drawn into the ampulla allowing the peritoneal surfaces to approximate and adhere, thus sealing the infection within the tube and protecting the peritoneal cavity from invasion. As the tubes become enlarged their weight frequently causes them to drop downward and backward into the cul-de-sac where they usually become adherent. The ovary is often sealed in between the posterior surface of the broad ligament and the rolled over tube and completely hidden from view. Sometimes an imperfectly closed pyosalpinx adheres to an ovary with a resulting tubo-ovarian abscess. More often however the tough tunica of the ovary is sufficient protection to its interior and the ovarian pathology is due chiefly to the congestion incident to its unhealthy surroundings.

Although the pathology of gonorrheal infection is important that which interests us most is its clinical significance. We should like to know for instance how frequently the tubes are involved following infection of the cervix; we should like to know in what proportion of cases infected tubes will resolve when treated without operation and particularly what proportion of such resolved cases will be able to become pregnant and bear children. Also we should like to know if, in those cases where infection of the cervix is either coincident with pregnancy or occurs during the pregnancy, post partum infection is greatly increased. We have attempted to study our material with some of these questions in mind.

For the purpose of ascertaining how frequently tubal involvement occurs following gonorrheal infection of the vagina, urethra or cervix, we have carefully reviewed the records of 33 patients who had positive smears. Of these, 17 showed positive urethra and cervix, 11 a positive urehtra only and 5 a positive cervix only. They have been under observation for periods varying from 1 to 21 months and during this time 13, or slightly over 39%, developed evidence of intrapelvic inflammation characterized by pain, tenderness, fever, enlarged appendages or pelvic masses. In only 2 of these 13 cases has operation been resorted to and one of those had tuberculosis of an ovary.

In order to get some idea as to whether or not gonorrheal infection of the lower genital tract during pregnancy increases appreciably the danger of puerperal sepsis, we have studied another series of 12 cases all of whom acquired this disease either about the time they became pregnant or shortly afterwards. Six of these had positive urethral and cervical smears, 4 urethral only and 2 vaginal only. One patient aborted at two months, another had cystitis and pyelitis complicating the pregnancy and 3 others had syphilis. In no case however was there any serious complication during the puerperium and the highest temperature recorded for the whole series during their stay in hospital was 100.2°.

We realize that conclusions must not be drawn from such small series but on the other hand we feel that these figures are of interest because of the fact that ordinarily it is very difficult to follow this type of patient for any length of time and therefore accurate statistics based on a large number of cases are seldom seen.

We have said that with marriage goes not only the danger from an infected seminal fluid but also the probability of pregnancy and labor. Not all pregnancies progress to term however. About one in every five terminates in miscarriage and miscarriage is complicated by infection more frequently than is generally believed. If we consider to what extent the decidua is traumatized by separation of the embryo or placenta and then think of this traumatized area as an open wound, we can better understand how easily infection may take place. One's judgment is sometimes put to a severe test in deciding upon the best method of treatment when miscarriage is incomplete, particularly when there is doubt regarding the presence of infection. In such cases let me warn against the use of the curet which increases the trauma, breaks down whatever defence barriers the tissue cells have been able to set up and permits pathogenic bacteria if present to gain access to the lymphatics or blood-stream. In the post-partum uterus after delivery at or near term the situation is similar. That is to say, there exists where the placenta was attached an open wound but one of greater size and with larger venous sinuses. Fortunately curettage soon after a full term labor is not so frequently resorted to.

We stated previously that labor implies injury to the cervix and consequently increased danger of infection by bacteria always present in the vagina during the puerperium. Allow me to revert for a moment to the anatomy of the pelvis in order that we may better understand the manner in which this type of infec-

tion spreads. We spoke of how the gonococcus travels along mucous surfaces attacking chiefly tissues directly in its path. The bacteria most frequently concerned in puerperal infection are the streptococcus, staphylococcus and colon bacillus and the infection spreads chiefly by means of the lymphatics and blood-stream. The cervix at the level of the internal os occupies a central position in the pelvis and from it strong connective tissue called the parametrium extends radially in all directions. Laterally thickened portions form the cardinal ligaments, posteriorly the uterosacral ligaments and anteriorly the pubo-cervical ligament of fascia. Above the parametrium lies the pelvic peritoneum but separated from it by a thin layer of loose cellular tissue. Lymphatic channels and blood-vessels pass from the uterus by way of the parametrium and this explains why puerperal infections so frequently give rise to pelvic cellulitis. When the infection gains access directly to venous channels, as it can readily do at the placental site if the uterus is relaxed, thrombosis of the neighboring veins is likely to occur. The process may then continue by direct extension and finally get free in the moving blood-stream causing septicemia. It would seem that the frequency of such an occurrence should be appreciably diminished when the uterus is kept well contracted and free postural drainage maintained.

We know that accumulations of pus in the pelvis not infrequently result from pelvic infection. They are usually spoken of as pelvic abscesses. These divide themselves into two principal groups according to the manner in which the infection has extended. In one the principal focus is in the Fallopian tubes and this type is probably most often caused by the gonococcus although bacteriological examination frequently fails to show the presence of this organism. In the other the infection has extended by way of the lymphatics through the parametrial and cellular tissues previously referred to. These are generally puerperal in origin and due to the streptococcus, staphylococcus or colon bacillus. Pelvic abscesses belonging in this latter group can be more satisfactorily treated by vaginal incision and drainage alone than can those in group one because of the fact that the inflammatory process has caused less damage to the tubes which are far less likely to be left permanently closed. In fact pregnancy not infrequently occurs in women who have previously had a vaginal section for drainage of an abscess due to pelvic infection of puerperal origin. In some instances when the infection has extended upward between the layers of the broad ligament the abscess can be drained through an extraperitoneal incision internal and parallel to Poupart's ligament.

Tuberculosis is a rare cause of pelvic abscess but must not be entirely disregarded. It occurred nine times in a series of over six hundred cases of pelvic abscess reported by Wharton.

Tuberculosis as a cause of pelvic inflammation in general is of greater frequency than was formerly believed. It usually attacks the Fallopian tubes which the organisms reach by means of the blood-stream. Occasionaly the cervix or endometrium is affected but rarely the ovary. Apparently the frequency with which tuberculosis of the pelvic organs is discovered depends largely upon the care with which tissues removed at operation are studied in the laboratory. Some authors state that salpingitis is tuberculous in 10% of the cases whereas our laboratory has reported only 14 instances of pelvic tuberculosis during the past five years. Because of its relative infrequency and the fact that we are dependent upon the laboratory for diagnosis in the majority of instances, tuberculous inflammation of the pelvis is of less clinical interest than the other types mentioned but we should always have it in mind when considering cases in which the etiology is not clear.

While the diagnosis of pelvic inflammation is usually not difficult there are instances where it is by no means easy. In some acute conditions involving the lower abdomen doubt may well exist in the mind of the attendant as to whether the offending organ is the appendix or a tube. Each year cases are admitted to the surgical service of this hospital and operated upon for acute appendicitis when instead an acute salpingitis is present. An interesting feature about this is that all such cases that we have known about have recovered, whereas most gynecologists believe that a high mortality results from abdominal section done during the acute stage of salpingitis. On the other hand we have known of a few instances where through error in diagnosis an acute appendix was admitted to the gynecological service, the condition not promptly recognized and operation unfortunately delayed. A painstaking history, close inspection of the external genitals and cervix together with thorough bimanual and rectal examinations will usually prevent such errors.

Neither is a positive diagnosis in subacute and chronic pelvic inflammation always so easy. Ectopic pregnancy, particularly in those cases where they have been repeated, small hemorrhages from the tube giving rise to a mass of more or less organized blood-clot in the pelvis, can easily be confused with inflammatory disease. Very chronic inflammatory masses occasionally become so hard that they are mistaken for fibroids or even malignant disease. Errors of this kind usually result in no harm as an exploratory operation is indicated in any case.

The treatment of pelvic inflammation will vary according to the tissues or organs affected,

the nature of the infection and the acuteness or chronicity of the disease.

Basing our opinion upon observations made during the past two years while treating a fairly large series of cases which we have been able to keep under very close supervision, we feel that in acute gonorrheal infection of the cervix the disease may be extended by too vigorous treatment such as the intracervical application of antiseptics or germicidal solutions. At best such preparations can only destroy those organisms which are on the surface as it seems unlikely that they will penetrate to the depths of the cervical glands. We believe also that frequent vaginal and bimanual examinations are contra-indicated for the same reason. During this stage local rest and cleanliness are considered sufficient.

In the more chronic stages where profuse muco-purulent discharge is the chief indication of the presence of infection and smears are repeatedly negative, cauterization of the endocervix if judiciously employed will give good results. In some instances the operation which consists in coning out the endocervix, known as the Sturmdorf tracheloplasty, may be preferable. It is useless to employ either of these methods if one cannot feel reasonably certain that the patient will not expose herself to reinfection.

Acute gonorrheal infection of the Fallopian tubes is best treated by rest, ice bags to the lower abdomen and Fowler position. Prolonged hot vaginal douches are of questionable value. Special methods of increasing the resistance of tissue cells in the affected organs such as injections of protein substances and diathermy et cetera will be discussed in separate papers. Operation should be postponed until fever and pain have subsided and is not usually advised with the first attack unless pain persists and the inflammatory masses remain large after prolonged conservative treatment. In general it may be said that the longer operation is delayed the greater can be the conservation of organs and the smoother will be the post-operative convalescence.

Puerperal infections must be dealt with somewhat differently though the indications for rest and posture remain the same. Accumulation of pus in the cellular tissues of the pelvis is an indication for prompt drainage and, if the infection is not extremely virulent, complete restoration of function will not infrequently result.

Intra-uterine applications of germicidal solutions such as alcohol in the treatment of postpartum infection of the uterus is not advised, as the bacteria which have already invaded the tissues beneath the endometrium will not be reached while the manipulation incident to the treatment may cause trauma and result in further spread of the disease.

Blood transfusion is believed to be of very definite value in increasing the resistance of the tissue cells particularly in instances where infection has occurred following hemorrhage during miscarriage or labor. Mercurochrome intravenously is considered too dangerous for general use and in any case should be employed with caution. No experience has been had with vaccines or sera.

Pelvic tuberculosis is so rarely diagnosed before operation that opportunity for treatment is seldom afforded. Many cases of tuberculous peritonitis which may or may not have been pelvic in origin have been apparently cured by means of the quartz lamp or other light treatment. Dr. Barnes of the R. I. State Sanatorium for Tuberculosis has supplied me with abstracts of several cases which have been greatly benefited if not completely cured by the use of heliotherapy. Such reports are certainly very encouraging and will probably result in laparotomy being resorted to less frequently in the treatment of this disease.

The Use of Milk Injections in Pelvic Inflammation*

BY JOHN CHAMPLIN, JR., M.D.

It has been recognized that many infectious diseases can be cured by the introduction into the body of non-specific protein substances, that is, by substances which, unlike the remedial agents of specific therapy, have no relation whatever to the infection under treatment. To give a few examples: diphtheria antitoxin was used with success in sepsis, tuberculosis, lupus and sarcoma; the serum of horses immunized with yeast cells was effectual in certain eye diseases; arthritis deformans and other forms of arthritis were cured or ameliorated by typhoid vaccine or antimeningococcus serum. Asthma, neuritis and many other diseases of bacterial origin have been relieved in this non-specific manner.

To state briefly, it has been established by observations made in all fields of practical medicine and by animal experimentation as well that protein substances introduced by subcutaneous, intramuscular or intravenous injections, have the faculty of stimulating the cells of the body to greater activity. All cells of the body feel this rejuvenating influence but none more so than those cells which have been weakened or paralyzed by infection. These cells seem to obtain a new lease of life; some of their normal vigor returns and their natural means of defense becomes reassembled. It must not be forgotten that after all the most forceful efforts of throwing off an infection are those exhibited by the affected cells themselves. If the infection is too strong the cells succumb but

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under the stimulus of foreign protein injections they revive to renew the struggle against the invading organisms. The protoplasm again develops phagocytic properties, the toxins are neutralized by a fresh production of antibodies and ferments, the local metabolism is intensified and the pus is absorbed. Under favorable circumstances the infected organ or tissue may thus rid itself of its enemy and more or less normal conditions may be established. Therapeutic results cannot be expected when the organism is no longer capable of response to stimulation. That is to say, when complete fatigue has been reached no amount of stimulation will avail.

A large number of proteins have been recommended and used to advantage. Among these are normal blood, immune sera, antitoxins, cerebrospinal and pleural fluid, egg albumin, milk, casein, neucleoprotein, peptone, leukocytic extract, extracts of tissue and endocrine glands, vaccines of all kinds and tuberculin.

The non-specific protein treatment with milk was introduced into medical practice by Robert Schmidt of Prague in 1916. Dr. George Gellhorn of St. Louis was the first man in this country to adopt milk injection therapy. He and numerous other men have reported very favorable results following this form of treatment.

Ordinary whole milk has been used chiefly. Although several pharmaceutical preparations of sterile milk in ampules are now on the market, the men who have done the most work with milk injections agree that these preparations have no special advantage. To quote Gellhorn, "Only one improvement has been added in the last few months. K. D. Graves of Roanake suggested injections with centrifugalized and fat free milk and I can fully subscribe to his claim that such milk produces no local irritation and that both general and focal reactions are greatly reduced without any apparent influence on the efficacy of the procedure."

The technic of the milk treatment is very simple. Ordinary whole milk is sterilized, either by boiling or by pasteurization at 80° C. for one hour on six successive days. The boiling method of sterilization is more practical. A previously boiled test tube is filled with 10 c.c. of milk and then boiled for ten minutes in a water bath in such a way that the test tube does not touch the bottom of the vessel. It is then poured into a sterile medicine glass and drawn up into a sterile syringe. By this time it is cool enough to use. The skin is prepared with iodine. Five c.c. of this milk are injected into the gluteal musculature and the injections repeated at intervals of from three to five days. The stronger the reaction the longer the intervals within this limit. The amount injected is gradually increased to 10 c.c., which is usually reached by the third injection. The average number of injections is six. Some cases clear up on two or three while others require more. If a thin sharp needle is used the injections are not painful, although the bulk of the fluid injected may cause a momentary discomfort.

The method of preparing the milk varies with different men and clinics. The above mentioned method is the one employed by Gellhorn. Polak uses "ordinary warm unboiled hospital milk." At the Woman's Hospital, New York, Rawls uses Grade A whole milk sterilized in a water bath for one hour at 60° C. or in the autoclave at 15 lbs. pressure for 15 minutes. The bottles and corks are boiled for 30 minutes and sterile precautions are used in filling the containers. The sterile milk in its container is kept in the icebox until used.

The general reaction occurs as a rule from six to eight hours after the treatment. In about half of the cases there is a chill followed by a rise in temperature. In the majority the temperature will be 100 degrees to 102 degrees F. but in some it will differ very little if at all from normal. A few patients will have nausea, headache, feeling of drowsiness or a somewhat profuse perspiration. These signs of a general reaction appear only in the beginning of the treatment. After the second of third injection there is as a rule no further disturbance of any kind. It has been stated by several writers that the initial intensity of this general reaction seems to have a bearing upon the ultimate outcome. This does not correspond however to the results obtained in other clinics. The reaction does not last longer than a day. After this the patients feel markedly improved. They look better and their appetites improve. Blood examinations show that the white count reaches a marked degree of hyperleukocytosis on the day following injection, decreasing on the second and returning to normal, or count previous to injection, on the third day. Among the many thousands of injections reported only a few cases of anaphylactic shock have occurred and Peterson remarks that in these few cases a part of the injection may accidentally have reached a vein. Great care should be taken that this does not occur. In all the literature there is no report of abscess formation at the site of the injection.

There are several absolute contraindications for milk injections. Among these are cardiac decompensation, diabetes and alcoholism. Whether pregnancy belongs to this group is still an open question. Peterson enjoins great caution where there is a history of hypersensitiveness on the part of the patient (serum sickness, asthma, urticaria, angioneucotic edema) or of epilepsy or other grave nervous instability.

The principal field for protein therapy in gynecology is in the treatment of pelvic infections, particularly those of gonorrheal origin. Usually a marked subjective improvement fol-

slows promptly after one or two injections and it is but rarely delayed until after the third or fourth treatment. It is this relief from pain that makes it difficult to keep patients in the hospital or home long enough to obtain corresponding objective results. When the patient remains under sufficient treatment, the steady diminution and eventual disappearance of the adnexal tumors may be observed in favorable cases.

In obstetrics protein therapy has yielded satisfactory results according to the majority of writers. The outcome in puerperal sepsis depends largely on the power of resistance of the organism and there is no doubt that protein injections immensely enhance this power of resistance.

All parts of the genital tract do not respond equally well to milk injections. The tubes and uterus and possibly the bladder are favorably influenced while the ovaries remain refractory. Exudates are brought to absorption but adhesions are left undisturbed. Gonorrheal infections of the cervix remain unaffected by the treatment. The cervix therefore must be treated separately for the sake of preventing re-infection.

In concluding I think we can get no better advice than that of Peterson, who says, "Nonspecific therapy requires judgment, care, attention and bedside study on the part of the physician, perhaps in greater measure than any other therapeutic procedure. It should never be routine. To be useful it must be an individualized therapy with dosage, preparation and time of application varied to the disease, its intensity, its duration and the resistance of the patient. So used nonspecific therapy should prove to be one of the most useful measures both in acute infectious diseases and chronic inflammatory lesions.

Thermotherapy in the Treatment of Pelvic Inflammation*

BY WILLIAM H. MAGILL, M.D., F.A.C.S.

My first interest in Physiotherapy began with an endeavor to find some method of applying heat to the tissues of the pelvis in a uniform way over a considerable period of time.

The vaginal douche, a physiotherapeutic modality, has been the only method at our command for applying heat locally. It has become a routine practice to order douches in pelvic inflammatory conditions and we know in what a careless manner they are often given or taken. particularly in regard to the position of the patient, the temperature of the fluid and the length of time consumed.

Some hospitals have special douche tables, the water supply having mixing chambers where a constant temperature can be maintained for a continuous douche of 15 or 20 minutes, or longer if desired. My interest in this subject led me to visit several pioneer physiotherapists, among them Titus and DeKraft of New York, Granger of Boston and Stewart of New Haven. I found that Dr. Titus had been using diathermy to concentrate heat in the pelvic tissues using an anterior electrode over the abdomen and a posterior electrode over the sacral region. Later the Corbus-Chapman vaginal and rectal electrodes were introduced with special thermometer attachment and these offer a better method of localizing and concentrating heat in the pelvic tissues.

Diathermy is the penetration of the tissues by an electrical current of high frequency that results in heat production. The amount of heat generated depends, first on the voltage and number of milliamperes used, second on the size of the electrodes, third on the resistance of the tissues and fourth on the length of time that the current is applied. By the use of this electric agent heat can be generated in the tissues to tolerance, usually 105 to 110° F. for medical purposes, or be carried still further and cause destruction of the tissues as in surgical diathermy.

Medical diathermy can be applied to any tissue at any depth provided the part treated lies between two electrodes and that we have a machine that is powerful enough to drive the current through. The current travels the shortest distance between the two electrodes and when the electrodes are of equal size, the heat produced in the tissues is at a point midway between them. When the electrodes are of unequal size the point of greatest heat is nearer the small electrode. The action of heat upon diseased structures results first in active hyperaemia, the intensity of which depends on the degree of heat and the length of time it is applied.

The first effect of heat, whether a hot douche or diathermy is used, is to produce or increase congestion and therefore when the object is to bring more blood to the parts, as in cases of amenorrhoea or scanty menstruation, a warm douche at 100 to 104° F. or a diathermy treatment of 100 to 102° F. is indicated. If however the object is to deplete the pelvic tissues and reduce congestion, the douche must be long enough and hot enough to contract the vessels and thus diminish the blood supply.

To give a douche properly we should have at least 6 to 8 quarts of water at a constant temperature of anywhere from 108 to 115° F. given while the patient is lying comfortably in the recumbent position with hips elevated and the douche bag or reservoir suspended only high enough above the patient to give a slow constant stream. With diathermy the same principles hold true, using an abdominal electrode

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(the size depending somewhat upon the size of the individual and the amount of abdominal fat) and a vaginal electrode with thermometer attachment.

The amount of current can be gradually driven through the tissues to the tolerance of the patient or until a satisfactory reading of the thermometer is reached indicating the amount of heat in the tissues in the immediate vicinity of the vaginal electrode, usually 104 to 108° F. The time of treatment varies from 20 to 40 minutes allowing 3 to 5 minutes to reach the maximum temperature and the same time to close and the treatments are given at least 3 times a week.

Heat destroys bacteria at varying degrees of temperature. According to Corbus and O'Connor the gonococcus, the organism that we are most commonly called upon to deal with, is killed at from 104 to 108° F. in 40 minutes. While the organisms may not be killed at these temperatures, it is felt that the virulence of the organism is somewhat attenuated.

In my opinion all forms of heat locally are contraindicated in acute pelvic inflammatory conditions and particularly in post-partum and post-abortion infections. The essential factors are rest in the Fowler position, the use of morphine if necessary, the ice bag to the abdomen, the building up of tissue resistance and the elimination of toxins by means of the Harris or Murphy drip and low enemas as indicated.

I feel that sunlight and fresh air are particularly indicated in these cases and that when weather conditions are not suitable treatments with the air cooled Ultra Violet Light are very valuable. In known tuberculous conditions such treatments are unquestionably of great benefit. The exposure should be general, dividing the body into four quadrants according to the method of Rollier, commencing with a short time exposure and gradually increasing the time and decreasing the distance of the lamp from the body.

When a pelvic abscess has occurred and a posterior colpotomy has been performed with establishment of free drainage and there yet remains considerable indurated tissues, diathermy will help to hasten convalescence.

In the sub-acute cases I feel that diathermy can be used but should be used with care particularly in those cases having a post-partum or post-abortion history. It never should be used when there is a definite collection of pus without first providing for free drainage.

It is in the chronic cases that I feel I have seen real benefit from treatments with diathermy. These cases would have done well perhaps if they had had douches regularly and properly given at home and had been as faithful to the rest of the routine treatment. Diathermy in such cases is but an adjunct and should be combined with rest as far as possible, proper care of the bowels avoiding drastic cathartics, freedom from coitus and sexual excitement, tamponing and hot cleansing douches.

In these chronic cases there is usually evidence of cervical infection, which I believe is best treated by means of the cautery or auto-coagulation. When Skene's glands or Bartholin's ducts show evidence of infection, dessication, auto-coagulation or the cautery is indicated.

ANAEROBIC INFECTION: THE PROCESS

BY NEIL A. DAYTON, M.D.

THE study of the process of gas bacillus infection was greatly stimulated by observation of the thousands of cases presented by the World War. A condition accounted rare in civil practise[1] suddenly became the focus of medical research because of its common occurrence, spectacular symptoms and high mortality. The resulting work, during and subsequent to the War, has done much to bring about an understanding of the mechanism of this infection, a process unique in its total departure from the usual as found in infections by other organisms. The military cases were original in that they revealed a combination of contributory factors never observed in civil life. Men exhausted by long continued fighting amid the miseries of trench warfare were wounded on ground intensively cultivated for centuries and harboring numberless bacteria. These soldiers were cold, wet and mud-besmeared for weeks and months on end with little food and rest. At the lowest ebb physically they had bullets or shell fragment tear through their muddy clothing and carry large quantities of bacteria deep into their tissues. Shock, hemorrhage, the interminable journey by stretcher and jouncing ambulance before operative measures were available, completed a train of circumstances ideal for the establishment of gas bacillus infection.

The organisms commonly concerned in gas bacillus infection are:

1. B. Aerogenes Capsulatus (B. Welchii, B. Perfringens);
2. Vibrion Septique (B. Oedematis Maligne[2]);
3. B. Oedematiens (B. Bellonensis[3], [4]);
4. B. Fallax[5].

These anaerobes, originally derived from animal feces, are found in all cultivated soils[6] and are a source of infection for wounds contaminated with dirt.

THE PROCESS

The accepted mechanism of the infective process has been considered as one following an injury or wound in which dirt, bits of soiled clothing, fragments of bullet or shell carrying the organisms, have gained access to the tissues through lacerations, traumatism, fracture or all three combined. Coincidental cold, shock or hemorrhage hasten the process and the involvement of such tissues as muscle, cellular tissue, pleural fluid, hematomata and brain favor growth[7]. In muscle the process extends longitudinally with ease but finds difficulty in passing transversely from one muscle to another. When the bacilli are introduced a rapid multiplication at the site of injury gives rise to gaseous infiltration of the healthy tissues with retention of gas and consequent sustained pressure[8]. This pressure, which rises as high as one and a half atmospheres (23 lbs.)[9], is extremely destructive to living tissues by maintaining a complete anemia of the muscle fibres within which the pressure is generated. Actual fragmentation of individual fibres may take place. The infection is spread throughout the length of entire muscle groups mechanically, the tissues are wrung dry of fluids and gangrene is established by ischemia[10]. The systemic intoxication due to the highly toxic by-products of the autolysis of muscle killed, augmented by the absorption of the exotoxin produced by the bacilli overwhelms the patient and death ensues[11].

The foregoing theory emphasizes the seriousness of the mechanical accident of gaseous distension and minimizes the importance of toxin production. The occurrence of fatal gas gangrene without these fulminating characteristics or in those but slightly wounded led other investigators[12] to study the production and action of the toxin. They found that when the detoxicated anaerobes were injected under the skin of animals the bulk of the bacilli undergo lysis and some are taken up by phagocytes and destroyed; the infection is walled off and the bacilli destroyed by the normal body defenses before the production of toxin is possible. The injection of whole cultures (i. e. with toxin fully developed) gave a different result. In the presence of toxin there was a conspicuous absence of local protective reaction amounting to a paralysis of defense, with the production of a violent gas gangrene. Insofar as toxin is rarely found with the bacilli in soil it appeared that some other agent must act in conjunction with the gas bacillus in producing sufficient paralysis of local defenses to permit the bacteria to elaborate toxin. This agent was found to be calcium salts. When these salts were introduced subcutaneously with detoxicated bacteria, a tissue lesion resembling that of the toxin was produced. A lesion which permitted the detoxicated bacteria to produce toxin and a rapidly developing gas gangrene. Examination of various soils showed that calcium salts were present in varying concentrations. A sample of soil autoclaved and made into an emulsion elicited gas gangrene from the spores of vibrion septique. After being filtered, autoclaved and tested for sterility, the emulsion gave the same result. This power was lost when the calcium salts were precipitated by sodium carbonate. Later[13] it was found that other substances namely, sterile distilled water[14], [15], the colloids, silicic acid, gelatonic colloidal gold, palladium and iron gave similar results. These writers consider that the patchiness of the occurrence of gas gangrene at the front may be explained by the difference in calcium content of the soils in which the wounds were received. While convinced that the tissue injury induced by the depressing effects of the calcium is most important they admit that the defense rupture might occur where the vitality of tissue has been severely effected. This deprivation of the normal defenses afforded by the blood might be brought about by any factor which would lower blood pressure. Such factors as continued cold, hemorrhage or shock. The notable incidence of gas gangrene cases associated with compound fracture has also drawn attention to the action of calcium. The suggestion is made that the calcium from shattered bone provides the material for local defense rupture[16].

Following the initial establishment of the bacilli in a location favorable to their growth other factors make their appearance which accelerate the process. B. Welchii has the power of rendering a cultivating medium acid[17], reducing the pH of the medium to 4.5 in thirty-six hours[18]. By this means the serum is converted into a preeminently favorable medium for the further growth of the anaerobes[19], [20]. So the vicious circle is established. Bacteria produce acid which stimulates the growth of the bacilli with the production of larger amounts of acid. The process goes on with ever increasing rapidity with the added effects of the toxin. A process aptly compared by Wright to "the progress of an avalanche". The local acidosis develops into one involving the general circulation with a lowering of the reaction (pH) of the blood[21], [22]. In this manner the blood stream becomes a favorable medium for growth of the anaerobes. The same investigator found that the addition of glucose to culture media did not accelerate the production of gas. The addition of acid, even in small amounts, gave immediate positive results. From this he deduces that the presence of acid rather than available carbohydrate is the essential factor in the extension of the local lesions.

THE TOXINS

The toxins elaborated by the anaerobes in their growth are considered as the final causative agent when death occurs. These toxins are two

in number, one causing blood destruction and hence an hemolysin and the other acting locally on tissues and blood vessels causing oedema and necrosis[23]. This hemolytic action of the toxin was demonstrable on animals and in necropsies during the World War[6]. Cultural studies of the anaerobes have given us additional information. The toxin or soluble poison appears early in the life history of the culture, in the initial phase when the multiplication of the organism is maximal. When the energy phase with the production of gas has become dominant the toxin decreases rapidly in potency. Filtrates of cultures at the height of poison production, freed from bacteria, appear to be relatively stable in their toxic action. This suggests that the phenomena attending the energy phase of the culture are destructive of the poisonous substance[24]. It appears that the chief damage has been done when the general symptoms of the energy phase, namely gas production, have made their appearance. It is then, a matter of sufficient quantity of toxin having been produced to give blood destruction.

THE CIVIL CASES

It is seen that the cases encountered in the World War were due to a succession of factors favorable to the establishment of a gas bacillus infection. The cases observed in civil practise lacking this panoply of causative factors, display little uniformity in symptomatology and manifest themselves in atypical variations. Cases following injury with the usual symptoms do occur but usually are not as rapid in their course. The civil cases arrange themselves in two groups; (1). Cases following introduction of the organisms from without, by instrumentation or injury, often with fracture.

(2). Cases resulting from absorption of the organisms from the gastro-intestinal tract.

The process in group (1) is essentially the same as the military cases. Prompt diagnosis, aided by the use of the röntgen ray[25], and thorough surgical measures confines most of these cases to simple local lesions. Others show symptoms of the fulminating type, blood invasion by the organisms, profound toxemia, manifestations of hemolysis and death. This severe type is more often observed in cases involving the uterus, either puerperal[26] or following attempted abortion[6, 27, 28]. Severe cases of this type show intense jaundice[28], pigmentation of the entire body, urine black from blood pigment[6] and at necropsy the evidences of the lytic action of the toxin on the red cells by deep staining of the valves of the heart and endocardium[27] and intima of aorta[29]. Cases with gas production and symptoms of hemolysis have shown recovery[30] with repeated transfusions suggesting that the overcoming of the blood destruction is possible once the production of toxin by the local lesion has been stopped.

The cases in group (2) primarily result from the presence of the gas bacilli in the gastro-intestinal tract. In these cases we see a picture which makes it hard to believe we are dealing with a disease caused by the same organisms. The military cases with an established local lesion show severe toxemia, blood destruction and gas production. In the gastro-intestinal cases we may have a simple intestinal upset following a contamination of the water supply with B. Welchii[31]. Another variation is the presence of the gas bacilli in the blood stream commonly[32] and for varying periods [33] up to three months[34] without a symptom. This interesting development again draws attention to the fact that the blood serum has remarkable protective powers and that a fatal process develops only when the bacilli are able to establish themselves by metastasis or in a location already the seat of some pathological process of other origin. The active resistance of the blood serum to the bacilli is demonstrated in the experiments[21] in which one cubic centimeter of normal serum showed the power of preventing multiplication of 4,000,000 bacilli.

There are several conditions in connection with the gastro-intestinal tract with which gas bacillus infection has been associated. These are diseases of the stomach, gall-bladder, liver, small intestine and appendix. From the cases reported we would judge that the bacilli do not cause serious disturbance unless they are able to gain access to organs already the seat of tissue lesions of other origin. Ordinarily invasion of the blood by bacteria from the gastro-intestinal tract is rare[35], but under conditions where lesions are present, they may enter from this source[36]. Lesions existing in which this phenomenon has occurred are gastric ulcer[29, 37] and typhoid ulcerations[38] both resulting in metastasis with gas production, profound toxemia and death. The process in attacking a diseased gall-bladder may simulate gall-stone colic[39]. The bacilli have been cultured from the centers of gall-stones and thus concerned in their actual production[34]. Occasionally the operative measures connected with gall-bladder disease[40] open up new passageways for infection[41]. In this case the local anemia from surgical interference may reduce the local defenses and permit the bacilli to multiply and produce toxin. Carcinoma of the liver may render possible the establishment of an infective process and enable the toxins and organisms to reach the circulation[34] or liver abscess may harbor the anaerobes[40]. The gas bacilli, including B. Fallax[42], are not uncommon in appendicitis as judged by studies of pathological material. Their incidence varies from twenty per cent. in acute cases[43] to ninety per cent. in entire groups[44], the B. Welchii occurring with greater frequency in cases of gangrenous appendix than in the usual inflammations[45]. B. Welchii anti-serum is

valuable in cases of this type[46]. Referring to Cramer's work[13] on the importance of calcium as a cause of primary defense rupture it is interesting to note that concretions within inflammed appendices show about 3.5 per cent. of calcium salts. Also these concretions cause definite inflammatory process in their immediate vicinity[47]. That the production of toxin, even in small amounts, with its demonstrated destruction of red cells is not to be regarded as unimportant is suggested by the presence of large numbers of gas bacilli in the intestines of pernicious anemia patients[48]. This fact takes on a new significance as it has been shown that B. Welchii can establish a chronic infection with anemia and loss of weight[49], the blood picture bearing a close resemblance to that seen in pernicious anemia[50].

SUPRARENAL EXHAUSTION

It has been noted that the toxin produced by another anaerobe, B. Tetani, is a thousand times more lethal than that of B. Welchii. Yet death in this infection does not often occur sooner than two or three days after infection, while in gas bacillus infection death may ensue within twelve to eighteen hours. The factor causing this difference was found to be a constantly occurring exhaustion of the suprarenal glands[13], not only a diminution of the cortical lipoid as seen in a number of septic conditions, but a profound alteration of the medulla resulting in a paralysis of the organs. There was not only a temporary lack of adrenalin as might follow excessive stimulation of the gland, but a complete inability to form new adrenalin. The other endocrine glands show little effect but the adrenals are markedly altered[51]. As suprarenal hypofunction has been shown to be the cause of spontaneous gangrene[52] the selective action of the toxins of the gas bacilli for these organs is revealed as one explanation of the rapidity of gas bacillus infection.

SUMMARY

1. The process of infection by gas bacilli depends on conditions which depress the vitality of the tissues and produce a rupture in the normal defenses. This interference may be accomplished by, (a) the introduction of toxin or substances such as calcium salts, the colloids or sterile distilled water, (b) any factor withdrawing the defenses of the blood from the site of injury, such as continued cold, shock and mechanical or surgical interference with the circulation of the part.

2. The toxins are two in number and have a local and a hemolytic action, one extending the tissue injury and the other attacking the red cells by lysis. The toxins have a selective action on the suprarenal glands resulting in a complete paralysis of these organs.

3. The process in infections arising from the gastro-intestinal tract differs decidedly from that of a tissue injury. The bacilli have difficulty in establishing themselves and seek an already existing pathological lesion as a locus of attack or as a means of entering the blood stream. Anaerobic infections have been associated with gastric and typhoid ulcers, gall-bladder disease, abscess and carcinoma of the liver and inflammations of the appendix.

4. The long continued presence of the gas bacilli in the blood stream without the terminal symptoms suggests a chronic infection. This is significant as the blood picture of chronic gas bacillus infection bears a close resemblance to that of pernicious anemia.

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DR. KELLEY, THE HEALTH OFFICER*

BY ALLAN J. MC LAUGHLIN, M.D., U.S.P.S.

ABOUT three or four years ago I was sitting in my office in New York when a very distinguished English sanitarian called and said he had been making a tour of the principal city and state health departments of the United States. He said: "It is the most amazing thing to me that in every place where I have called they tell me I must go to Massachusetts and study this man Kelley. Who is this man Kelley? What are his qualities that give him such pre-eminence that everyone says I must learn from him all about health administration?" I told him that Kelley was like a department store in that he had everything necessary for a perfect health commissioner. It took me twenty minutes to explain to that Englishman what I meant, and that Dr. Kelley was not engaged "in trade".

That is an illustration of how Dr. Kelley was regarded by his fellow-workers in public health administration.

I see in the audience here several persons who were perhaps more or less responsible for my coming to Massachusetts. I have nothing but the kindliest feelings for them. I was just an innocent bystander who came in after the revolution, but let me say that after an act of the Legislature was passed calling for the abolishing of the old State Board of Health and the organization of a new Department of Health I do not believe that a majority of the citizens wanted that revolution. The poor individual coming in from the outside had anything but an enviable task before him. I had only one salvation and that was to secure the kind of man to impress upon the people that my arrival was something over which I had no control, but that I had a temporary job of reorganization and that then the ship would be turned over to a Massachusetts man. I knew an outsider would get no further than that. The thing was to find the right man. This man must have extraordinary qualifications or I should be an utter failure. I had many friends among the state and city health officers of the country. I wrote dozens of letters stating in brief the man's qualifications. He must be a Massachusetts man, or at least a New England man, he must have extraordinary knowledge of public health administration, he must be the newer type of health officer. I got a whole lot of letters in which all mentioned Eugene R. Kelley. I got a letter from Dr. B. J. Lloyd, stationed in Seattle, and he said that possibly Dr. Kelley would be receptive to an offer to come back to Massachsuetts. I immediately got in touch with Dr. Kelley and told him that while I could guarantee nothing that I could assure him that I would do everything in my power to have him take my place as Commissioner. It was asking a great deal of Dr. Kelley, Commissioner of Health of the State of Washington, to come back to Massachusetts practically as Deputy, and yet without that type of man I could not have put this job over. A man who has received the highest honors from the State of Massachusetts, a member of the Legislature, carried a bill around in his pocket to reorganize the new Department, not the original Board but the suc-

*Address delivered at Memorial Meeting to Dr. Kelley at Boston Medical Library, April 13, 1926.

ceeding Department, and it was, therefore, doubly necessary that I should get somebody who was big enough to carry the load. Dr. Kelley, luckily for me and for Massachusetts, saw his way clear to come back with that assurance from me.

There is another thing. Dr. Kelley was an administrator. He had already been Commissioner of Health of a great state. The work I required him to do was detail work. I have never known his equal as a master of detail, but he never lost the larger administrative view. He could master this interminable detail necessary in the problems here in Massachusetts. The question of milk was the first to come up and we had the father and mother of a very beautiful fight on our hands. They said it was an unsolvable problem in Massachusetts between the consumers, the producers and the dealers. Dr. Kelley did the most painstaking amount of work on that, and in the end the so-called "McLaughlin Milk Bill" should have been called the "Kelley Milk Bill" because he did all the work and deserves all the credit. He adjusted the situation to the reasonable satisfaction of all parties.

Then there was the tuberculosis situation in the State. Massachusetts had done much in tuberculosis work, yet there was a lack of cohesion in the units in the program, and it was necessary to bring out a comprehensive program for tuberculosis in all its phases. This job was also turned over to Dr. Kelley. He was an administrator and he understood details. He brought out this program and it was the first time that any state had really undertaken a program for the whole problem from beginning to end. This was the thing that challenged my admiration.

In my first experience here, I approached two men with whom I came in contact on a certain problem and got two reactions. The first was that "This can't be done." The second was that "If it can be done, what's the use." This was before Dr. Kelley got here. When Dr. Kelley came, imagine the relief to meet a man who could visualize success and could see the feasibility of something that anyone might have doubt as to its feasibility or advisability. Dr. Kelley said, "Yes, it ought to be done and of course if it ought to, it can be done."

I was very anxious to do something with the venereal disease problem. No state had done anything except California. California had done a little. I fully expected to find that Dr. Kelley would give me the kind of answer I had before, "Don't touch it. Leave it alone. It must not be mentioned." This group of diseases cost the United States five hundred million dollars per year, and yet as health officers we must leave it alone! But Dr. Kelley said, "Why, certainly, why dodge it. Somebody must start it." He was a friend of Dr. Snow in California and he was reasonably familiar with the California situation. Indeed he had intended to take it up in Washington. So we took the question up here. What we did with it is history. It was just before the war and we made salvarsan and distributed it in defiance of German patents. A program worked out in detail by Dr. Kelley was put in effect in Massachusetts and when the war broke out it was the basis of the program for the entire country, handled jointly by the Army and the Public Health Service. The program was put into effect in the forty-eight states and later the Chamberlain-Kahn Bill was passed, based on the program worked out by Dr. Kelley here in Massachusetts.

Dr. Kelley had so many qualities it is hard to pick them out, but one of the striking things about him was his sense of proportion. We found that sometimes a District Health Officer would give a third of his time to taking care of dog bite cases. Now we have one death a year from rabies and 8,000 to 10,000 from tuberculosis. You can imagine there is something wrong in that proportion. Dr. Kelley fairly worked out a schedule of work based on the size of the factors in our problems, adjusting the time of the men to fit in with the magnitude of the problems. He had the rare combination of a man who could do detail in any problem and at the same time be a great executive officer.

The state health officers of the United States are in rather close co-operation. I am an honorary member now myself, so I know this. There is no man in that organization who was so frequently consulted and in whose advice so much confidence was placed as Eugene R. Kelley. He was the first man the state health officers thought of when a new problem or the solution of an old problem seemed necessary. There were some officers out of the forty-eight states who stood far above their fellows, such as Rankin of North Carolina, Chesley of Minnesota, and Kelley of Massachusetts. They elected him President of that organization and the finest work that Kelley did was work he never got any credit for in committees and giving advice. He was extremely modest, he never wanted credit but he gave it to the other fellow. In the American Public Health Association he was an old member, rarely missed a meeting, and his work on committees was tremendous. I happen to know that in St. Louis in October of last year it was the intention of the Governing Council to elect Dr. Kelley President of the American Public Health Association. It was irony of fate that he didn't live long enough to receive that honor, the greatest honor they can bestow. I know that because of an actual canvass of the Governing Council.

His work with the American Medical Association was equally great and also without any credit whatever. Kelley belonged to a group of young health officers. You know, we had in the

old days giants in public health work like Biggs of New York and Chapin of Providence. Of the younger generation certain men picked up the gospel and taught that a health officer must be a statesman and not a policeman. The work of Chapin and others showed that police power itself was futile and if we were to control disease it must be done by statesmanship. Dr. Kelley was a pioneer with Rankin, Emerson and some of these other men in 1908, 1909, and 1910. Kelley stood almost alone, but gradually that has come to be the accepted doctrine.

He was a great friend of the medical profession and intensely loyal to the profession at all times. When the profession at times had open warfare against the health officers, Kelley never wavered. He was a fine force here in Massachusetts in preventing what nearly went over in the Legislature, an attempt to put a medical insurance act on the statute books. There was good argument for it. It had been done in England and it was admitted that the majority of the people couldn't get good medical care. The very rich and the poor in large cities got good care but the mass of the people in between did not. Kelley had vision enough to know that this was not the remedy. The real solution was to have the medical profession solve its own problems, assume its own obligations to see that all people got good medical and surgical care. Then he fought against any expansion of state medicine. He stood by the profession through thick and thin.

These are achievements which showed nowhere, for which the man received no credit and desired no credit.

I think one of the outstanding things in his make-up was his loyalty. I never knew a man who was so loyal to his friends. They could do no wrong, and yet he was fair to his opponents. I never knew him to speak an ill word of anyone. I have known him to be silent rather than express an opinion when it was difficult for him to keep silent, but he never would speak ill of anyone. He had that great gift, charity. He could be hurt by what someone would do, but he had no vindictiveness against that individual. It seemed to have been left out of his make-up. He not only had that divine optimism, but with it a tremendous energy and enthusiasm to push a thing through to success. He was a diplomat and a fighter. It has been said that there are three kinds of officers: the fighter, who is always a fighter and nothing else and who is always in trouble; then the diplomat, who is so diplomatic that he never does anything; then there is the third type, the fighter and diplomat, who goes after a thing until he gets it; and that was Eugene R. Kelley.

I never knew him to lose his temper. You must remember that I was closely associated with him under the most distressing circumstances in committee hearings of the Legislature. He had the cleanest mind of any man I ever knew. He never told a story that could not be told with propriety anywhere. He was clean all through. He had such a delicate sensitiveness that he could be hurt but feel no resentment. I have seen him come back from hearings with tears in his eyes and his underlip trembling with emotion, hurt, sick, hurt because human beings could not see the right thing when it was put to them in the right way. I said, "That is all right, Gene, we will get it next year." He could not see how any reasonable man could not see things in the right way.

He was a delicate, sensitive soul. Things hurt him more than people thought. He was not rough enough to be a health officer. He shouldn't have been in the public life at all because I know that a man has to be something of a roughneck, have the patience of Job and a hide like a rhinoceros to get by in the public life. These things hurt Kelley but he kept on carrying on. He would have made one of the greatest teachers in the world with his sublime ideals if he could have a responsive body of students to listen. Public health officers are teaching but they are teaching the most unresponsive body of people in the world. When you come to the Legislature and try to get money they won't listen to argument because their minds are made up in advance. After a few sessions you get what you want but because by that time people have told them they must do certain things. Because of his inherent honesty Dr. Kelley couldn't understand that other people were different.

Instead of a public health officer, Dr. Kelley should have been a great teacher in one of our universities. He would have fulfilled his destiny perhaps as well. But the things we must remember are the great achievements of this man. I have told you but a beginning of the things I could recite. I have simply tried to give you an idea of how he was regarded by the men who knew him well. The feeling I have for him is an admiration for the clean mind, his devotion to his family, his beautiful home life and the absolute honesty of the man who couldn't think anything wrong, who couldn't do anything wrong.

THE ABUSE OF REST IN CARDIAC THERAPY*

BY WILLIAM D. REID, M.D.

It is firmly established that rest is a valuable measure in the treatment of heart disease and the writer wishes to state emphatically at the start that he frequently resorts to it. Rest may be, however, a two-edged sword; the benefit achieved does not always outweigh the harm. It is the contention of this paper that rest is too frequently or too strictly applied in cardiac therapy.

Instances are met where physicians have advised the sole bread-winning member of a family to give up his work and go to bed for a period of months, although subsequent examination by other physicians has failed to disclose sufficient indication for such treatment. The continuance of such patients at their employment has been approved and subsequent observation over a period of years has shown that no detriment but even improvement has resulted.

In the first place it is, of course, essential that an accurate diagnosis be made of the condition of the heart. On this point it should be remembered that those in charge of cardiac clinics frequently find that in one-third to one-half of the cases referred to them there is insufficient evidence on which to diagnose any heart disease whatsoever. Sir Thomas Lewis[1] goes even further and states that three-fourths of the patients said to be cardiacs are not cardiacs.

It is unfortunately true that at times there is a misinterpretation of various physical signs consistent with a normal heart. In other instances examination shows abnormal physical signs but the heart affection is in the condition of an arrested process and the lesions may properly be interpreted as scars.

INDICATIONS FOR REST

The presence of heart failure ("broken compensation") of a sufficient degree or evidence of heart infection in an active stage are perhaps the chief indications for rest. It is emphasized that the heart failure is qualified by the phrase "of sufficient degree"; the presence of heart failure of moderate severity, particularly if not persistent, is not, of course, incompatible with the patient being up and about. No absolute rule can be given; one must individualize with each patient and carefully weigh the pros and cons of restriction to bed.

In instances of infection of the heart it is often, as well known, difficult to determine whether the process is active or arrested. In most cases of cardiovascular syphilis the patient does just as well if allowed moderate activity provided suitable antisyphilitic therapy is administered. The severity of the symptoms and the comfort of the patient are probably the best guides. On the other hand, in rheumatic heart disease (i. e., the so-called endocarditis associated with acute rheumatic fever, etc.) it is common to restrict the patient to bed for many months after the disappearance of all signs of activity of the disease. The advocates of keeping these patients in bed for six months or even a year speak as though thus they achieve complete cures or a marked lessening of the damage to the heart. I must confess that I am unaware of any convincing evidence that the prescribers of prolonged restriction to bed accomplish anything better than those who permit a gradual resumption of activity a short time after (perhaps one to four weeks) the disappearance of the acute stage of the disease. We don't fear to permit the use of joints, definitely involved in acute articular rheumatism soon after convalescence is established. Although the joints and the heart are different structures it seems fair to question why we should take so different an attitude toward the heart? The therapeutic problem appears to be primarily that of combating the infection, and when convalescence is present it would seem that the heart will not suffer greater harm if a gradual resumption of activity is allowed, *provided untoward symptoms are absent*. Periodic contraction is a physiologic property of cardiac tissue and it is yet to be proven that the use of the body short of the production of symptoms of heart failure in any way interferes with the process of repair in the heart muscle. My conception of the subject coincides with my experience that prolonged bed rest does not obtain better end results. It would be helpful if a sufficiently large series of strictly parallel cases could be treated by the two methods.

VALUE OF REST

It is a common observation that when the patient is put at rest many and sometimes all the symptoms of heart failure disappear. When the circulation is thought of according to a mechanical theory it is easy to conceive the lessening of the work which the heart is called upon to do. This has even been estimated in the number of footpounds of work per hour, day, etc. It happens, however, that of late the worth of these mechanical conceptions of the heart has proven less convincing to an increasing body of physicians.

It is becoming more and more evident that the physiology of the circulation comprises much more than the action of the heart alone; the contraction of the muscular coats of the arteries and of the Rouget cells[2] of the capillaries are also important factors in the onward propulsion of the blood. The dilation and con-

*From the Evans Memorial and the Department of Medicine, Boston University School of Medicine.

traction of the peripheral stream bed under the influence of the vasomotor nerves are likewise significant. And in addition the return of blood in the veins, especially from the lower limbs, by the mechanical compression of these vessels by the surrounding skeletal muscles when in action plays its part. We must think in terms of the circulatory system as a whole rather than too exclusively of the central pump, i. e. the heart. Even the most rigid application of rest cannot stop all activity of the heart. If the rate of the latter is not accelerated it seems reasonable to conclude that the mechanism of the circulation is operating well.

INSTANCES OF WRONG APPLICATION OF REST

A man of thirty-eight with rheumatic heart disease and mitral stenosis, clearly of at least eight years duration, was advised by his physician that he must be extremely careful of all exertion, for instance, he "must not even lean over to pick up a match." Result,—the prompt appearance of marked hyperchondriasis which took much time and effort to abate. He did well continuing at his work as a tailor for four years; auricular fibrillation then appeared during the febrile stage of acute bronchitis, when he was at *rest in bed.*

Case of respiratory failure during the quinidine therapy of auricular fibrillation. The physician who witnessed the attack explained his failure to apply artificial respiration on the ground that he "knew that the patient had heart disease and he thought that the exercise of the arms, etc., might prove harmful." Comment is unnecessary. Fortunately respiration returned spontaneously and the patient recovered.

Woman ill for one week with "grippe," with mild symptoms and no temperature in excess of 101° F. On getting out of bed one week later she felt dizzy and faint. A diagnosis of "myocarditis" was then made and the family physician and specialist, who saw this patient over an extended period, kept the patient in bed four and one-half months, and in a written statement advised great care as to physical exertion for the remainder of her life. Examination showed no reliable evidence of heart disease and prompt and sustained recovery followed the removal of this diagnosis and inducing the patient to gradually resume her normal life.

Boy of eleven with chronic rheumatic heart disease originating in a single attack of rheumatic fever at the age of nine years. The lad enjoyed practically normal activity and without symptoms. His parents could not keep the boy from running up the hill to his house when he came home. The family physician then considered the advisability of removing the boy to some institution, as a military school, in order that the restriction of his activities could be enforced. The boy has remained at home without further restriction and is doing well.

This last case brings to mind some remarks by the late Sir James Mackenzie on heart disease in children. His words are[3]: "It should be understood that children with a heart, the efficiency of which is impaired, will not injure it by overexertion. Children are very sensitive to distress provoked by cardiac insufficiency, and will themselves abstain without being told, and one can usually recognize the degree of inefficiency by getting the child to state if he likes running about with a hoop or running upstairs. When they say they like doing it and it gives rise to no distress, it may be considered, whatever the cause of the trouble, that it has not impaired the heart's strength. I cannot recall a single instance where I could reasonably attribute heart failure to a child's voluntary exertions.

The same reasoning applies to the games of boys and girls; when they exert themselves and find pleasure in doing so, it may be taken for granted that no harm results."

Multiplication of examples of the misapplication of the use of rest in cardiac therapy is unnecessary.

THE HARM DONE

The unintended harmful effects that may follow the prescribing of rest to cardiac patients may be classified for the moment under three headings.

(1) Physical. It is well-known that in the elderly prolonged rest in bed has a very real danger in that it is sometimes very difficult to again get the patient out of bed; congestion of the lungs and hypostatic pneumonia may result. Much loss of tone of the bodily musculature is prone to occur and is not always readily regained. It is also conceivable that there may be some loss of function of the various reflex mechanisms[4] which do so much to perfect the circulation of the blood.

(2) Psychic. Ordering rest in bed in any or all heart conditions is sometimes the worst thing that can be done. To condemn the patient to idleness is to anchor and perpetuate any neurotic tendency. There may result a fixation of the idea of invalidism.

(3) Economic. It is a serious matter to prescribe a treatment which may cost an adult his position on which his livelihood depends. In children, it is true, the loss of time is less important as it merely means the loss of their class in school. In some children, however, this is attended with a considerable psychic trauma. It seems fair to hold that a very definite benefit must be achieved to compensate for the loss of time involved.

COMMENT

Suitable exercise, it will be conceded, is part of good hygiene. Individuals affected by diseased hearts are handicapped; why deprive

these handicapped persons of the benefit of exercise? Is it not true that the prescribing of rest is so helpful in some cases that these good results may be said to carry the burden of the all too frequent instances where rest is neither indicated nor attended with any degree of benefit? It would seem that a similar situation exists as regards digitalis therapy, which is too often fruitlessly applied.

Rest is not always the panacea that it is sometimes thought to be. On this point, if one may be permitted to go outside his own field, there may be a partial analogy in the treatment of fractures of the long bones. Here though absolute fixation, i. e., rest, is the first principle of treatment, it is common knowledge that there are cases of ununited fracture of the femur where union is obtained only after a caliper splint has been fitted and the patient allowed to walk by means of it.

It is often held that the patient should be in bed when digitalization is being accomplished, but experience shows that in many instances this can be safely accomplished in ambulatory patients.

Notwithstanding the fact that there are symptoms referable to the heart in the condition known as effort syndrome, irritable heart, and by various other terms, such as the soldier's heart, etc., which it is true is not in any proper sense actual heart disease, it was clearly shown in the recent war that many of these patients could be made fit by gradually increasing exercise. The successful hardening of these soldiers by exercise should not readily be forgotten in civil practice. Too much rest was the worst thing possible for these men.

And finally, although it has been sufficiently indicated above that the writer believes that rest is often a valuable and sometimes an essential part of the therapeutics of heart disease, the reader is again cautioned against assuming that this paper deprecates all use of rest in cardiac therapy.

CONCLUSIONS

It is contended that rest is too frequently prescribed in cardiac therapy.

Rest is often a two-edged sword, and its pros and cons should be carefully considered before it is prescribed in the treatment of diseases of the heart.

According to the present state of our knowledge the burden of proof should be shifted to those who advocate prolonged rest in bed. Some very definite need should be present and there should be a strong probability of a benefit comparable to the amount of time given up by the patient.

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THE APPALLING WASTE

By and large, the professional man is a short-lived individual—and it is fair to include all of the recognized professions, doctors, lawyers, engineers, architects, dentists, writers, accountants, etc. These men and women who should by education be best prepared to protect and defend themselves against ill health and short life, seem prone to neglect even the ordinary health precautions.

Recently the health and physical condition of a group of these professional men—in particular physicians, lawyers, engineers and architects, were observed—the general superficial health condition of these men was exceedingly low—probably not more than ten per cent were highly developed, virile-appearing individuals; and the working conditions—light, heat, general sanitary conditions were such as would not be tolerated in an industrial plant by the State Labor Board, and certainly would not be endured by the average skilled mechanic or factory worker.

It is indeed a pity that these most useful and select individuals should be sacrificed with so great indifference. Economically if for no other reason, it would seem highly desirable that an intelligent effort be made to secure increased longevity among these highly skilled workers.—*Buffalo Sanitary Bulletin.*

PUBLIC HEALTH SERVICE ANNOUNCES A NEW PUBLICATION

The United States Public Health Service announces the issuance of a publication known as the "Venereal Disease Manual for Social and Corrective Agencies."

There is much evidence which emphasizes the relationship between venereal diseases and feeblemindedness, insanity, dependency, delinquency, crime and other conditions affecting the social structure. Study and investigation have shown the need on the part of social workers, probation officers and others for authentic information on the venereal diseases and their concomitants which so deeply affect society. It was to meet this definite need that the publication was prepared.

In addition to giving fundamental information on the medical aspects of the venereal diseases, their relief and prevention, the manual deals with socio-economic conditions and has chapters on the following: The Venereal Diseases and the Community; Sex Education; Legal Aspects of Venereal Disease Control; Sex Morality and the Law; Juvenile Delinquency; Aids in Conditioning Behavior, etc.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 12221

A PROBLEM IN THE DIAGNOSIS AND TREATMENT OF GASTRIC DISEASE

MEDICAL DEPARTMENT

A Portuguese mulatto laborer forty-two years old entered the hospital January 23. He had smallpox at eighteen, pleurisy with effusion at twenty-nine. At twenty-seven he had chancre, untreated. For ten years he had worn a truss for right inguinal hernia. He had had gonorrhea three or four times, untreated until he was thirty-five, when he had syringing; also five injections in an arm vein.

For two years he had had slight non-radiating pain in the midepigastrium without relation to meals, occurring at any time, often the first thing in the morning, and passing off quickly whether he ate anything or not. He had been troubled with eructations of gas. At first the pains were slight, with remissions of one or two months. For the past four weeks they had been more severe and were burning in character and non-radiating. He had had pain five or ten minutes after every meal lasting about five minutes, stopping and then recurring. For three weeks he had the pain almost constantly and vomited with some relief nearly every day, sometimes twice a day. Food gave no relief. For the past week it had not been so severe and he had not vomited. He had been afraid to eat. He had taken little except milk, corn flakes, eggs and crackers. He thought he had lost ten pounds in the past four weeks. His bowels had moved only once in two or three days. There had been no blood in the vomitus or the stools.

Examination showed a well nourished man with general glandular enlargement. Dullness and bronchial breathing at right apex. Retraction at right top. Heart not enlarged. Pulses and arteries normal. Blood pressure 110/78. Upper abdomen stiff, with tenderness in epigastrium. Prostate enlarged and tender. Genitals showed scar of old primary chancre. Pupils irregular; reacted well. Knee-jerks active. Other reflexes normal.

Amount of urine normal when recorded, specific gravity 1.012 to 1.028, the slightest possible trace of albumin at two of seven examinations, 1 to 5 leucocytes per high power field at all, one to occasional red blood cells at three. Blood: 9,000 to 12,100 leucocytes, polynuclears 69 per cent., hemoglobin 60 to 70 (?) per cent., reds 4,300,000 to 3,400,000, moderate achromia with some anisocytosis and poikilocytosis and slight basophilia, platelets diminished. Two Wassermanns strongly positive. Non-protein nitrogen 32 mgm. Guaiac on stools negative. Gastric analysis: fasting contents 55 c.c., free HCl zero, combined HCl 12, guaiac positive. Microscopic examination showed red and white blood corpuscles. Test meal: 125 c.c., free HCl 19, combined HCl 38, guaiac negative. Microscopic examination showed starch granules.

X-ray: Mottled dullness at the right apex extending as low as the second rib in front and most marked in the periphery, gradually fading out toward the root. It was composed of rather coarse dense shadows. Entire right chest smaller than the left and less prominent. Diaphragm on this side high and respiratory movements limited. Costophrenic sinus obliterated. Gastrointestinal studies showed the stomach of the orthotonic type, normal in position. There was a great deal of spasm in the region of the antrum, and this portion of the stomach was not seen to fill as usual. There was some irregularity of the curvature, especially on the greater side. Peristalsis was not seen. There was no retention from the motor meal at the end of six hours. The barium on the other hand left the stomach rather freely. First portion of the duodenum appeared normal in contour, in the usual position. The motor meal had reached the cecum at the end of six hours.

The temperature was 97.5° to 99.9°, the pulse 62 to 96, the respiration normal.

The patient continued to have severe epigastric pain in attacks lasting five or ten minutes without relation to food. He lost weight.

A surgical consultant and one visiting physician both advised exploration. By the advice of the other visiting physician however mercury and potassium iodide were started. The pain became if anything more constant and the patient vomited. February 5 he was given 0.2 grams of neoarsphenamin intravenously, followed by 0.45 grams February 8, 12, 20, 24 and March 1. After two injections of neoarsphenamin there was definite subjective relief. February 13 lumbar puncture gave 10 c.c. of clear colorless fluid, initial pressure 85, pulse and respiration normal, pressure after withdrawal of 5 c.c. 35, after withdrawal of 5 c.c. more 15, 9 cells, alcohol and ammonium sulphate positive, Wassermann negative, goldsol 1123321100, total protein 27. He continued to gain. By February 19 he was entirely without gastric symptoms.

February 23 X-rays of the stomach showed

no marked change since the previous examination. In the fluoroscopic examination a tubular mass corresponding to the filling defect could be palpated.

March 2 the patient was discharged with orders for mercury and potassium iodide and to report at the Out-Patient Department every month.

After leaving the hospital he felt some relief, but continued to have dull gnawing pain, coming on within fifteen minutes after taking any kind of food and lasting half an hour. It was not relieved by soda and was aggravated by food. The only relief was from vomiting. If this was not spontaneous he induced it. He gained weight and strength during the period of antiluetic treatment. He then went to the country and stopped treatment. After that time he lost weight and strength and his symptoms became worse. January 14 he "caught cold." His bowels did not move and the pain became suddenly worse.

Records of the Out-Patient Department show treatment with mercury and potassium iodide, another series of eight injections of diarsenol 0.3 gm. May 8-June 30, and a series of iodobismuth quinine 0.2 gm., seven doses July 7-August 20.

The stomach is of the orthotonic type; normal in position. There was a great deal of spasm in the region of the antrum, and this portion of the stomach was not seen to fill as usual. There is some irregularity of the curvature, especially on the greater side. Peristalsis was not seen. The first portion of the duodenum appears normal in contour, in the usual position.

January 26 he was readmitted to the hospital. Examination showed him poorly nourished and looking sick. The lung signs were essentially as at the previous visit. There was definite tenderness with slight spasm in the epigastrium. The knee-jerks were hyperactive. There was slight ataxia of gait.

The urine was cloudy at one of two examinations, specific gravity 1.022 to 1.030, no albumin, sugar, pus or blood. The blood examina-

tion showed 18,900 to 8,400 leucocytes, 85 per cent. polynuclears, 70 per cent. hemoglobin, 4,970,000 reds, smear normal. Wassermann negative. Gastric analysis: fasting contents, 100 c.c. of slightly bile stained material, no free HCl, combined HCl 20, guaiac negative. Microscopic examination showed many epithelial cells, a few leucocytes. Test meal, 150 c.c. of material containing well chewed food particles, free HCl 20, combined HCl 15, total HCl 35, guaiac negative. Microscopic examination showed many starch granules and a few epithelial cells.

X-ray: Stomach examination showed the deformity at the pyloric end previously described considerably increased in extent. The deformity was more prominent and the irregularity and apparent ulceration on the lesser curvature were greater. There was also retention of about one-third of the motor meal at this time. The first portion of the duodenum appeared normal in contour. The six hour meal had reached the cecum.

A South Medical consultant reported, "It would seem that if this were gastric lues the patient would have shown more definite improvement as a result of the intensive antiluetic treatment he was given." A surgical consultant reported, "I advise exploration for complete diagnosis, and excision if possible."

The visiting physician who was doubtful of malignancy a year earlier now felt prepared to find it at operation.

February 3 operation was done. The patient made a fair recovery, vomited only once, six ounces of old blood. The pulse was 100 to 110 and of fair quality. The night of February 4 it rose to 130. The blood pressure was 112/88. He vomited once. He was given a subpectoral of 1500 c.c. of 2½ per cent. glucose. Next day he was much better. The pulse was coming down. He continued to do well on a gastric régime and from this point made an uneventful convalescence. February 19 he was discharged relieved.

Discussion

by William D. Smith, M.D.

Notes on the History

From the history we can assume that he had or has syphilis, and we can assume that he has a definite pathology, probably in his stomach, more suggestive at this point of cancer than of ulcer. The history is not particularly suggestive of ulcer. We also should think now—I do not think we should have thought of it much fifteen years ago—of the possibility of late syphilis, gastric syphilis.

Notes on the Physical Examination

Apparently no mass was felt.

There is a further suggestion of syphilis in a genital scar and pupils which were irregular although they reacted.

The blood examination adds a moderate anemia to the picture of gastric pathology.

The record does not say whether or not he had lost weight in the last year or two. He had lost probably ten pounds recently, but there is no record of gradual, progressive loss of weight. He was well nourished, so he probably did not lose a great deal of weight.

The non-protein nitrogen is normal enough.

We know from these tests that he did not have stasis. He had a low acidity, but some free hydrochloric acid. Of course, in cancer and also in syphilis of the stomach we expect to get a low or zero acidity.

X-ray examination of the chest harks back perfectly well to his pleurisy with effusion, possibly an old tuberculosis of the right apex, and does not necessarily come into the present picture. There is no story of cough or hemoptysis. The hypermotility and the rapid passage of food from the stomach into the small intestine is more characteristic of ulcer than of cancer. We know now that he had a definite pathology as shown by X-ray.

Here may be a good place to stop and say a word about syphilis of the stomach, because the point of this whole case is the matter of diagnosis of syphilis of the stomach. In the eighth edition of Osler, which was published in 1912, syphilis of the stomach is dismissed with almost a sentence, that is, "Syphilis of the stomach is exceedingly rare," then going on to say that Flexner has collected a few cases. In 1917 or thereabouts Eusterman reported twenty or more cases in the Mayo Clinic which he felt were proved syphilis of the stomach. He has collected more since then and has I think reported some two hundred from the literature where he feels the diagnosis of syphilis of the stomach was probable.

I happened to be the "visiting physician" who felt that it was justifiable to wait in this case and try antisyphilitic treatment, and I felt that it was justifiable for two reasons. In the first place he did not need a gastroenterostomy symptomatically, that is, he had no stasis; his stomach was emptying perfectly well. In the second place, it seemed to me that if he had a cancer of that extent he was essentially inoperable then. Of course that was taking a chance, because we can conceive of its being operable then and not later; but most cancers that show as much as this by X-ray are inoperable at the time they come to operation, so far as cure is concerned. So I felt that it was justifiable to wait and let him have a chance at syphilitic therapy.

The diagnosis of syphilis of the stomach is a very easy diagnosis to make, but it is an exceedingly difficult diagnosis to prove. What justifies one in making, I do not say an absolute

diagnosis, but a presumptive diagnosis of syphilis of the stomach? I think there are various combinations that justify one in making a presumptive diagnosis of syphilis of the stomach. (1) The first thing is definite evidence of syphilis, either by repeated positive Wassermanns, by an undoubted history, by other signs of syphilis in the patient, or by some combination of these things. (2) The second is that we must have a definite pathology proved by X-ray,—not a stomach disorder but definite organic pathology. (3) In the next place we should want very much to have an absent or low hydrochloric acid, because most of the cases of proved syphilis of the stomach have had a low or absent hydrochloric acid. (4) We should like to have the patient a little younger than the cancer age. This man was forty-two. He may have had a cancer, but he is younger than the average. (5) We should like not to feel a mass, because strangely enough we do not feel a definite tumor mass in syphilis of the stomach nearly so often as we do in cancer. (6) The absence of that definite appearance of cachexia so commonly seen in stomach malignancy. These requirements were so nearly met by this patient that I felt that a presumptive diagnosis of syphilis was justified.

The initial pressure on lumbar puncture was low, but that is not important. Nine cells is a high normal, depending where we draw the line; if at five, then nine would be a little high. The total protein is within normal limits, yet the ammonium sulphate and the alcohol are both positive, meaning an increase in protein. The total protein finding, which is quantitative, is more reliable than the fact that the alcohol and ammonium sulphate were positive. The goldsol is a little abnormal. This is not quite a normal fluid. It might point perfectly well to the fact that the man had had something sometime in his spinal axis, very likely an old specific process which was now a burned-out affair.

The X-ray people were better clinicians than the clinicians themselves. Could this mass be felt more easily if it had barium in it?

DR. HOLMES: I don't know. But I think if you can see what you are feeling you are more likely to feel it.

DR. SMITH: "He gained weight and strength during the period of antiluetic treatment." That is important. Later, when he went to the country, I happen to know that he started working and stopped treatment.

18,000 to 8,000 leucocytes is a pretty wide range. This blood shows an interesting thing: although his stomach is worse he is less anemic than he was at his first admission. Another interesting thing is that he was not cachectic on his second admission, although his stomach was worse. Treatment had done something for him.

Here again there was a low hydrochloric acid value.

In spite of the fact that the man in a general way was no worse, no more anemic, no more cachectic, I felt that in consideration of the large amount of syphilitic treatment he had had, if this lesion had been of syphilitic or gummatous pathology it should not have increased in extent. The house officer still stuck to syphilis.

I think that in this case a presumptive diagnosis of syphilis of the stomach was justifiable, and so far as it can be proved by operation and by the pathologist it was proved.

PRE-OPERATIVE DIAGNOSIS

Carcinoma of the stomach or syphilis.

OPERATION

Gas-ether. On exposing the stomach through the usual incision a mass was felt in the lesser curvature extending from the antrum to the middle of the stomach. This did not show any marked scarring on the surface, but was covered with red stipplings. It was not hard and nodular, but felt more like spongy or inflammatory tissue. There was also a rounded mass on the gastric side of the sphincter, with edematous infiltration of the stomach wall. These two masses did not seem to be connected. The diagnosis was not clear from the external palpation, except the presence of a mass which was thought to be either syphilis or malignancy. Excision was decided upon. As the stomach was quite freely movable it was possible to draw down the stomach and apply clamps, making a partial gastrectomy, closing the end of the duodenum and the end of the stomach and then making a posterior gastro-enterostomy. This procedure seemed to be easier than a Polya. There was plenty of stomach left for the anastomosis. No other lesion was found. The incision was closed without drainage.

PATHOLOGICAL REPORT

On section the pylorus is thickened, and there is a flat elevated area 15 cm. in diameter in the mucous membrane. At the cardiac border there is a large oval ulceration measuring 2.5 by 4 cm. with slightly elevated irregular borders. Elsewhere the mucous surface is smooth, and no lymph nodes can be found in the omenta.

Microscopic examination shows an ulcer whose surface is covered with necrotic exudate. The submucosa is relatively thickened and composed of a vascular cell-rich connective tissue. There is much perivascular wandering-cell infiltration composed of lymphoid and plasma cells. No spirocheta pallida can be found. There is no evidence of carcinoma or lymphoma. The appearances are similar to other lesions found in the stomach of syphilitics, which form a characteristic group.

Chronic gastritis.

Further Discussion

The surgeon himself, when he gets it in his hand, is none too sure whether it is syphilis or malignancy.

Incidentally I think the spirocheta pallida has been reported by someone in England in syphilis of the stomach. I do not know that it has been confirmed in this country.

Dr. Holmes: I know of one case, I think from the Presbyterian Hospital in New York.

Dr. Smith: It is an extremely interesting case, more interesting than the history would indicate. It illustrates very well the difficulty of making a positive diagnosis. It illustrates the difficulty of being able, even by therapeutic response, to tell whether the thing is syphilitic or not.

There is one interesting point here, and that is, when people are treated for some time for syphilis of the heart, aorta, or liver, we have the paradox of the patient's improving but the specific lesion's getting worse. The patient, due to the treatment of his general syphilitic disease, improves; his color improves, he feels better and is better; but the aorta or heart or liver may get progressively worse, and I think that is what happened to this man. He needed syphilitic treatment very badly. He got it, and his anemia and general condition improved, but in spite of that his gastric lesion grew definitely worse, as shown by X-ray and symptomatically.

Have you any comments to make on this, Dr. Richardson?

Dr. Richardson: Nothing except that given the lesion in the stomach wall an ulcer might develop on that as a base and not be amenable to the syphilitic treatment.

Dr. Young: Do you think that ulcerated surface was secondary to the treatment?

Dr. Smith: I have no opinion. I do not see why it should be, because syphilitic treatment heals gummatous ulcers.

Dr. Young: The pathological description of that mass does not show enough damage so that surface sloughing should occur because of lack of blood supply. Could the whole thing have been an atypical ulcer with scar tissue around it?

Dr. Smith: I do not see how one could prove that it was not. At the same time the clinical history was distinctly against ulcer, the low hydrochloric values were somewhat against ulcer, the absence of any food and soda relief was also somewhat against ulcer. I think that in connection with the clinical history would make an ulcer very doubtful.

Dr. Holmes: Some of the cases reported as syphilis of the stomach have shown ulcerations.

Dr. Smith: Yes. The ulceration does not rule out the possibility of its being syphilis of the stomach, I am sure.

Dr. Young: The X-ray picture is not that of ulcer, is it?

Dr. Holmes: No, it is not. That picture is rather characteristic of syphilis or cancer. We do not distinguish between cancer and syphilis. Usually about the only distinguishing difference we have is the finger-print-like areas in the margin of the bismuth shadow that we see in cancer and not in syphilis. But we do not always see them in cancer.

Dr. Smith: A real hour-glass stomach that did not disappear under atropin would be pretty suggestive of gastric syphilis, would it not?

Dr. Holmes: I do not know that I could say exactly that, because we get hour-glass stomachs in simple ulcer, I should say probably more often than in anything else. If we take all the cases of real hour-glass stomach we should find gastric ulcer to be the most common cause. Of course we can usually demonstrate the ulcer too.

Dr. Smith: What about cancer with the hour-glass stomach?

Dr. Holmes: I have never seen a true hour-glass in cancer.

Dr. Young: If you knew just as well before operation as you do now that that was not cancer but almost certainly syphilis, would you advise operation?

Dr. Smith: The second time he came, or the first? The second time I would, because he had had a very considerable amount of antisyphilitic treatment, and because the lesion was increasing in size.

Dr. Young: Just the fact of the lesion itself?

Dr. Smith: Yes. And of course theoretically if that goes on he gets a tremendous deformity of his stomach with lots of scar tissue which cannot possibly be cured by syphilitic treatment and will have to be operated.

Dr. Young: That is what I mean: there is a point at which a syphilitic neoplasm will not respond to treatment.

Dr. Smith: Yes. Scar tissue will not respond.

I should say that he had had a fair test of syphilitic treatment and that the thing was in spite of that distinctly growing worse. He was subjectively just as sick and X-ray showed that he was objectively worse. Whether or not he should have been operated on the first time he came in, to save him more than one year of discomfort, is the question.

Dr. Young: Have any of these responded to medical treatment?

Dr. Smith: Yes, plenty of them in the literature.

A Physician: I saw a case that came out of this hospital about six months ago. She had been through exactly this experience. She had had a definite tabes, and I assume that she had had antiluetic treatment. It could not have reduced her symptoms, because they did operate. I was wondering whether, in view of that

fact, you could place very much dependence upon a therapeutic test of syphilis of the stomach.

DR. SMITH: Of course that is an extremely difficult thing to say, because supposing this man had immediately got completely and entirely well, the assumption would have been that he had syphilis of the stomach. On the other hand he might have had an ulcer and got well. Ulcers are undoubtedly recurrent, but they do have remissions. There is a considerable number of patients in whom it seemed justifiable to make a presumptive diagnosis of syphilis of the stomach, who have been cured by antiluetic treatment, and there is a certain other number operated on with some such result as this. It is certainly not cancer, it is not the usual picture of ordinary gastric ulcer, and I believe it to have been syphilis.

LATER NOTES

April 29, two months after his discharge, the patient writes, "I have been feeling very well since my operation. I have no more pain in the stomach. I have not worked yet, as I have been rather weak and not yet fully restored. I have had medical treatment and have gained more than twenty pounds since I left. I feel very grateful for the treatment I received in the hospital, and I shall drop in in a couple of weeks to see you again."

May 17 he was seen in the Out-Patient Department. His weight was 134 pounds. He was symptom-free. He ate what he liked and had no trouble with his digestion. W. D. S.

DIAGNOSIS

Syphilis of the stomach.

CASE 12222

POST-OPERATIVE COMPLICATIONS, FATAL AND OTHER

SURGICAL DEPARTMENT

A New Englander of sixty-five, a watchman, was sent from the Out-Patient Department December 8. The chief complaint was epigastric pain of nine days' duration.

He had had scarlet fever, typhoid fever, pneumonia and influenza. He considered that he had always been strong and healthy and a vigorous worker. His father had "heart trouble" and a brother and a sister "kidney trouble". His first wife died of tuberculosis. None of his three wives had had children. He denied venereal disease. He had fractured the left forearm and the right lower tibia and astragalus, and a year before admission slipped and hurt his right knee. This was treated by rest, and was now improved. His bowels were always constipated. He had urinated twice at night for years. The urine was sometimes smoky. For the past six months he had had some incontinence. He had vertigo on change of position.

Two years before admission he noticed a hard painless swelling the size of an egg in the right upper quadrant. For a year and a half he had no symptoms referable to this. He kept it bandaged. For the past year he had vomited increasing amounts of "bitter, sour-smelling" material and had passed a great deal of gas by rectum with considerable reduction in the size of the tumor. Since the onset of the illness he had had some dyspnea. Six months before admission the tumor began to increase in size and to give dull non-radiating pain. On lying down the pain was relieved and the size of the tumor reduced. Two weeks before admission he caught cold. Nine days before admission during a severe paroxysm of cough he felt as though something snapped and immediately afterward had severe pain at the site of the tumor radiating to the scrotum on the right, intermittent, and severe enough to double him up.

Examination showed a very obese man with evidence of some loss of weight. He had some dyspnea on exertion. The teeth were a few dirty stubs. There was marked pyorrhea. The chest was barrel shaped and thick. The left upper chest seemed somewhat duller than the right. The voice sound was more distant on the left than on the right. The apex impulse of the heart was not found. The sounds were distant and not of very good quality. There was no enlargement to percussion. The blood pressure was 190-90. The abdomen was very obese, pendulous, and lax. In the epigastrium was a tender mass the size of an orange or a small grapefruit protruding from the midline of the fascial sheath two or three inches above the umbilicus. It could not be reduced within the abdominal cavity. There was no definite borborygmus which could be associated with the mass.

The urine showed the slightest possible trace of albumin at two examinations, specific gravity 1.018 to 1.026, 1-2 red blood cells and 1-2 leucocytes in one of two specimens. Leucocyte count 7,800. Wassermann negative.

Before operation the temperature was 98° to 101,° the pulse 85 to 69, the respiration normal.

December 10 operation was done. The next morning the patient went into coma. He was given 750 c.c. of five per cent. glucose intravenously, with ten units of insulin, and showed immediate improvement, which continued. December 12 the non-protein nitrogen was 35 mgm. per 100 c.c., the blood sugar 108 mgm. per 100 c.c. Three hours after the administration of 750 c.c. of glucose intravenously the CO_2 combining power of the plasma was 44 volumes per cent. There was considerable discharge from the two drains.

The wound and the general condition improved rapidly until December 24. That evening he had a temperature of 102°. The wound was explored and about a pint of pus was removed from beneath it. A Miller wick and a Dakin tube were inserted and 10 c.c. of Dakin's solution given every two hours through the tube. Next day the temperature was normal and he seemed much better. A culture from the wound December 27 showed a profuse growth of staphylococcus aureus. He continued to do very well, though he had occasional nausea and there was still a large amount of drainage.

December 29 while he was washing his hands he suddenly sank to the floor, apparently losing consciousness. When he was laid on his bed he regained consciousness almost immediately, but complained of feeling "sick all over" and gasped for breath. The pulse was weak and irregular and the heart sounds could scarcely be heard. There was no pulmonary edema or congestion. He was placed on a back rest and given ten grains of caffein sodium salicylate and a quarter grain of morphia. He grew worse and the breathing became spasmodic. He did not react to ten minims of adrenalin. Thirty-five minutes after the collapse he died.

Discussion

BY EDWARD L. YOUNG, JR., M.D.

The diagnosis on the story alone I think is made for us as an epigastric hernia. This is larger than I think is generally seen. The ordinary epigastric hernia is a small and comparatively harmless thing. It can be painful. Of course we see umbilical hernias in obese people, particularly in women, that get incarcerated, make a great deal of trouble and force operation. But it is very seldom that an epigastric hernia gets as large or as bothersome or —what seems to be true of this—as dangerous. It seems evident that there is bowel in the hernia and that it has been pretty much pinched, from the sudden onset with the cough eight days before and the pain and failure to reduce it. On the other hand it is a man, as I read it, who is a very poor operative risk. He is a watchman, a type which in itself means generally flabby muscular and poor general physical condition. He is very obese. He has a blood pressure higher than he should carry. The heart sounds show no serious impairment of the heart and yet are not very good. It is a type, particularly with the marked obesity, that we approach surgically with considerable hesitation.

On the other hand, I believe that with this story there is no choice; this hernia must be repaired. It is too dangerous to leave as it is. As it stands there are several precautions that ought to be taken, and I assume they were taken, because there were two days between entry and operation. His fluid and carbohydrate reserve must be made as large as possible, and the anesthesia should be a local anesthesia. Up to this point I see nothing strange in the situation. It is an operation that we should like to avoid but which seems to be forced on us.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Incarcerated epigastric hernia.

PRE-OPERATIVE DIAGNOSIS

Incarcerated epigastric hernia.

OPERATION

Under local novocain a transverse incision was made over the tumor and carried down to the fascia. The abdominal fat was about four inches thick. A sac the size of a fist was found containing a large amount of adherent omentum. A defect in the midline one inch in diameter was closed transversely with overlapping (Mayo method). The wound was closed with a stab wound drain at each end.

PATHOLOGICAL REPORT

A mass of fat containing a sac in which is a mass of omental fat. The whole is about 13 cm. in diameter.

Further Discussion

In spite of the change in the size of this on passing gas and the nausea, there was no bowel in this according to the record I am going to ask Dr. Prather to tell us why he did what he did, because, as you see, he did a certain thing and the patient did come back.

Such a condition makes us consider first pulmonary embolus; then the possibility of uremia or cerebral hemorrhage, none of which seems to fit. The diagnosis, apparently, was still different or he would not have done what he did.

Dr. G. C. Prather: The word came up early that morning that this man could not be roused. On the way to the ward I went over several things in my mind, namely embolus, acute acidosis, and uremia. He was a very fat man. On looking him over he did not seem the picture of an embolus. He had stertorous breathing at four or five a minute, was unconscious, cold, very slightly cyanotic, with a fair pulse, and looked as if each breath might be the last. So that without any anesthetic we cut open one vein and gave the glucose, on the basis that he looked the picture of acidosis more than anything else. It was remarkable, because he had not more than 250 c.c. of the glucose before he opened his eyes and was brought out of his coma.

Dr. Young: Did he become completely conscious?

Dr. Prather: Yes, he did. He began talking to us.

Dr. Young: It says two days later the blood

sugar was normal. Didn't I understand you that you had a blood sugar soon after this?

DR. PRATHER: He seemed so near death that we did not wait for a citrate bottle for a blood sugar before trying the intravenous glucose, so we did not have a real check as to whether he had a real acidosis. Later that same day he did have a normal blood sugar, that is, after he had had the glucose intravenously. We gave him ten units of insulin following the glucose in order to make it more available.

DR. YOUNG: I remember seeing that patient afterwards on the visit. It seemed to me quite a striking example of quick work. Forty-two volumes per cent. is essentially normal.

It is extremely difficult to keep these wounds absolutely clear because there is a large space in the fat where the nutrition is very low, where the serum collects very easily and where drainage is hard to handle.

This is an interesting comparison with the first attack of unconsciousness. The first time he went into coma he had stertorous breathing, and it does not say anything about the pulse, but I remember something was said about it and there was nothing particularly remarkable about it the first time. In other words, Dr. Prather did not have the picture, the first time, of pulmonary embolism. Even if there was no cyanosis I believe the diagnosis of pulmonary embolus is the best bet in this last description. I think Dr. Richardson will tell us that he died of pulmonary embolism.

DR. CABOT: Don't you think you ought to consider a blocked coronary? He might have had a block the first time and another one the second. Of course there is no such description of pain or of heart condition as would make us at all sure of it. But I have seen a blocked coronary at post-mortem with no more history than this.

DR. YOUNG: It seems to me unusual also to have a pulmonary embolus knock them down and let them come to as this did.

DR. DAVIS: I have seen repeated pulmonary embolism. I have seen the same patient have two or three.

DR. YOUNG: You think this may have been a second one?

DR. CABOT: It seems as if he ought to have more respiratory symptoms and fewer cerebral.

DR. YOUNG: Of course there has been an argument whether or not a pulmonary embolus can be fatal without showing cyanosis, and this record does not mention it. I will agree that it is not a typical picture that one could show for an embolus.

DR. CABOT: I certainly would agree that it was not typical of blocked coronary either, but I think it has to be considered.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Epigastric hernia.
Coronary occlusion, acute.
Repair of epigastric hernia.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Epigastric hernia.
Pulmonary embolism.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*

(Epigastric hernia.)

2. *Secondary or terminal lesions*

Pulmonary embolism.
Hypertrophy and dilatation of the heart.
Congestion of the lungs.
Slight arteriosclerosis.
Soft hyperplastic spleen.

3. *Historical landmarks*

Operation wound.
Chronic pleuritis.
Chronic peritonitis.

DR. RICHARDSON: He was a stout man with a big heart, somewhat hypertrophied—512 grams, moderate for him—and some slight arteriosclerosis, with coronaries perfectly free and capacious. He had a massive pulmonary embolism.

The operation wound was in pretty good condition. The liver, the gall-bladder and the kidneys were negative. In the prostate there was a small ovoid mass in the situation of the so-called middle lobe, one and a half by one centimeters, which slightly obstructed the urethra, but other than that it was negative.

We did not examine the head.

DR. CABOT: Was there anything to suggest that he might have had two pulmonary emboli of the same age apparently?

DR. RICHARDSON: He might have had a smaller one before the final calamity.

CASE 12223

RECURRING CONVULSIONS IN INFANCY

MEDICAL DEPARTMENT

A six-months-old boy entered through the Emergency Ward for the first time May 21. The chief complaint was convulsions of two months' duration. He was normally delivered at full term, and weighed eight pounds and one ounce at birth. He was breast fed for ten days and then weaned to lactic acid milk with two tablespoonfuls of karo, six ounces every three hours or "as much as the baby could drink"; so evidently the feedings were irregular. He vom-

ited and was therefore put on boiled water ten ounces with twenty-six ounces of unboiled milk and four level tablespoonfuls of dextrimaltose number three, plus one half teaspoonful of cane sugar. He was taking this at admission, seven ounces every three hours.

When seven days old he developed sore eyes and was in the Eye and Ear Infirmary four or five days. Since his discharge he had had no more trouble with the eyes. Recently he had had some vomiting and cough.

For two months he had been having convulsions which had recently been growing more severe and frequent and of longer duration. As described they were of a tonic type and lasted about five minutes, accompanied by laryngeal spasm. He had three the day of admission and two the day before. Four days before admission each ear was opened at the Eye and Ear Infirmary. His bowels moved daily. For the past few days the stools had been green. The night before admission and at two a. m. he had enemas. The morning of admission he had a convulsion. He cried with something of a crow. He entered the Emergency Ward with a temperature of 102.6°.

Examination showed a well nourished baby lying crying with a spasmodic crow. The anterior fontanel was wide open. There was evidence of a rachitic rosary and enlarged epiphyses. Chvostek's sign was slightly though inconstantly positive, Trousseau's slightly positive. The joints showed evidence of rickets.

The urine was normal; not sufficient for specific gravity test. The blood showed 8,200 to 10,000 leucocytes, 100 per cent. hemoglobin, 5,960,000 reds, 63 per cent. polynuclears, platelets diminished, smear otherwise normal. Wassermann negative.

The temperature fell steadily, reaching normal the morning of May 4, ranging afterwards from 97° to 99.6°. The pulse was 100 to 160. The respirations were 61 to 24.

The orders were for calcium chloride gr. x every three hours well diluted, and formula, S. M. A., four feedings of six ounces.

The baby took his feedings well and maintained his weight at about fifteen pounds. He had no convulsions in the hospital. By May 31 he was gaining and looking very well. He was discharged May 31. At his discharge his mother was told to give him a teaspoonful of cod liver oil three times a day.

Discussion

Edward S. O'Keefe, M.D.

Notes on the History

This baby was readmitted eight months after the first entry with a similar chain of symptoms. He had had a recurrence of this difficulty, and at that time the blood analysis was done and the calcium content was found to be 7.3 mgm., the blood phosphate 2.73. The electrical reactions were done, with a cathodal opening 2.6, closing 2.2, anodal opening 4.8, closing 4.6.

We have a six-months-old infant with convulsions as the chief complaint. These had recurred at frequent intervals for a period of two months. The baby was apparently normal between the attacks; at least nothing is said to the contrary. This is a significant history and is often sufficient to make a diagnosis, as the great majority of infants between four months and three years having such a history of convulsive seizures are suffering from spasmophilia. Such a diagnosis in this particular instance seems to me to cover the case better than the narrower term of tetany. Positive Chvostek and Trousseau signs were noted, as well as laryngospasm. No mention is made of carpopedal spasm, so we may call the tetany latent. Further to substantiate the diagnosis are the evidences of galvanic irritability, as shown by the electrical reactions and the low calcium content of the blood serum.

The temperature noted during the first few days in the hospital was due without doubt to the ear condition. In fact just such an acute infection is sufficient to precipitate convulsions in a spasmophilic infant.

There is considerable variation in the appearance of the symptoms characteristic of this condition. In a group recently analyzed by Powers, Chvostek's sign appeared in eighty per cent. of the cases, laryngospasm in sixty-four per cent, convulsions in fifty-two per cent., and carpopedal spasm in thirty-four per cent. There is, moreover, variation from day to day, in a given case some of the signs disappearing only to recur a few days later.

Tetany occurs with greatest frequency in the early spring months, owing no doubt to the deleterious winter influences, particularly to the lack of sufficient sunlight. It occurs in the great majority of cases between the ages of four months and three years, and most frequently in bottle-fed infants. It is met however outside of these age limits, and does occur among the breast-fed. It is often associated with rickets, as in this infant.

Occurring as late as four months, this is of course differentiated from convulsions due to birth injury, and not coming after three years furnishes another differential point from epilepsy.

Calcium chloride was given here. Recovery is prompt after the administration of calcium salts, of which calcium chloride is the most effective. Symptoms will often disappear in thirty-six to forty-eight hours. The dose should be ten or fifteen grains five or six times a day. Owing to the very unpleasant taste of the cal-

cium chloride, calcium lactate is often used, but a somewhat larger amount is necessary to produce the same results. The effect of the calcium therapy is fleeting unless it is followed by cod-liver oil or sunlight treatments, either natural sunlight or the quartz lamp.

From a dietetic standpoint other food than cow's milk should be substituted as much as practicable. Breast milk may be used in the younger cases; in the older children cereals and vegetables should be substituted to as great an extent as the child's age permits.

The type of tetany with which we are here dealing has been customarily referred to as non-parathyroid tetany. Collip has recently demonstrated however that rapid improvement in this so-called non-parathyroid type can be obtained by the subcutaneous administration of a parathyroid extract. This would seem to indicate that the present distinction between the types of tetany is an arbitrary one. The prognosis as to recovery is good, although occasionally sudden death occurs during an attack. Recurrences are frequent unless the diet and hygienic conditions are corrected, as shown in this case, where there was a recurrence in eight months when the mother had not followed the recommendations.

DR. ARTHUR W. ALLEN: Are you using a parathyroid extract now?

DR. O'KEEFE: No, I have never used it. I do not know if it has been used in this hospital.

MISS PAINTER: Dr. Aub discussed a case of a woman with very serious convulsions which followed thyroidectomy and stopped after she took parathyroid extract.*

DR. O'KEEFE: What I referred to is the use of the parathyroid in cases of infantile tetany which have not been operated upon and are the so-called non-parathyroid type.

DR. ALLEN: I knew that a very effective parathyroid extract has been supposed to be discovered within the last two years by Collip. There is a question whether it might not help to produce calcium in the non-union of fractures.

DR. O'KEEFE: There are four cases reported in the *Journal of the American Medical Association* in which the calcium content very definitely rose in a matter of two or three days after the administration of a parathyroid extract.

A HOUSE OFFICER: Dr. Aub and Dr. Hunter noted an undoubted effect of the extract. They showed in practically all their cases that they could get some rise in the calcium content of the blood, but that the real effect of the extract was to increase the calcium excretion, and that in some cases there was only a very small rise in blood calcium and in others a considerable rise.

DR. ALLEN: So it would be detrimental in fractures, as it probably takes the calcium out of the bones.

*Case 12182, May 6, 1926.

DIAGNOSIS

Tetany.

POINTS MADE BY DR. HENRY D. CHADWICK, DIRECTOR OF THE DIVISION OF TUBERCULOSIS OF THE STATE DEPARTMENT OF HEALTH, AT HEALTH CAMP CONFERENCE, WORCESTER, MAY 14, 1926

The Health Camps should be Rest Camps and not places in which to train athletes. The children that are sent to these camps are not physically fit and need rest rather than strenuous recreation. Rest is fully as important as food to make them grow and develop as normal children should do.

They should receive considerably more rest at the camp than they are accustomed to get at home. Parents can usually provide sufficient food, but are unable to get their children to take the rest that they need. The number of pounds gained will increase in proportion as activities are restricted. It is, therefore, recommended that the children be given an hour's rest on their beds before dinner, a two-hour rest period after dinner and a half-hour rest period before supper. If this schedule is followed the children will be resting during the hottest part of the day, which, in itself, is a desirable thing.

Strenuous field contests and long hikes should be avoided.

Playground apparatus is very important in a health camp—the more, the better. Swings, seesaws, slides and sand piles will amuse children for hours and keep them from becoming homesick, and such amusements have the advantage of not becoming competitive. Contributions for such apparatus can readily be obtained when the need is made known to local organizations.

The practice of sending children to a health camp for a two weeks' period should be discontinued. In such a brief period the children hardly become accustomed to the novelty of being away from home. Homesickness may interfere with improvement for the first two weeks. Sometimes children even lose weight during the first week. I think children should be accepted for an indefinite period and then discharged at the end of three, four or five weeks or when they get up to average weight, and then others can be taken in to fill the vacancies. This plan has the further advantage of continuing the camp routine without interruption. The children who have become trained will teach the new ones when admitted and carry them along without the difficulties that are experienced when all the children in the group are new to camp life. Much more permanent benefit will be obtained if this method is carried out.

Clothing—The most desirable camp costume is the short trunk and shoes for all the children under 12 years of age. This gives an opportunity to expose the body to the sun and get the maximum benefit from its curative rays. This is especially desirable for cases of malnutrition and children with the glandular type of tuberculosis. Care should be exercised to prevent sunburn, and this can be easily avoided if, during the first few days, the children wear their trunks only in the morning and late afternoon or on cloudy days. The same costume cannot be improved upon for swimming and wading.

When the consent of the parents can be obtained, it would be desirable to immunize all the children at the health camps against diphtheria.

Lakeville State Sanatorium is now open for patients suffering from non-pulmonary tuberculosis. Provision for heliotherapy is made and the treatment is supervised by one of Boston's well known orthopedic surgeons, Dr. Z. B. Adams. The rate is $7 per week for all patients up to 21 years.

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LEGISLATION IN ITS RELATION TO THE PRACTICE OF MEDICINE

IN an interview in the *New York Times* of April 18th Dean Roscoe Pound of the Harvard Law School points out that the pioneer spirit of independence is still a dominant American characteristic manifesting itself in reluctance to obey numberless legal restrictions. Furthermore, in discussing the workings of our laws, he emphasizes the need of efficient administration rather than dependence upon prosecution. "We must learn to take some of the load off prosecution and put it on administration." . . . "To give effect to police regulations through prosecution . . . is all right in a rural society but is not suited to an urban industrial society."

Those who would frame legislation upon medical practice may well consider these suggestions. In the first place by persuasive education the public must be thoroughly convinced that the welfare of the Commonwealth demands reasonable minimum standards of education and character for those who would treat the sick. In the second instance, our laws should be simple and easy of administration. The work left to prosecuting officers should be reduced to the minimum.

The creation and development of the Board of Registration in Medicine have, of course, done much along these very lines. Much remains to be done, not only in public education, but also in improving administration. On both of these points the maintenance of the single standard for the right to practice is of prime importance.

The minute that separate examining boards are established some of which grant the right to apply certain methods of treatment but prohibit others, the difficulties of administration are mutiplied enormously and the opposition of the deep rooted love of liberty is encountered.

Boards of Registration are established for the protection of the public. For this reason those outside of the profession may well be represented in state control of registration either on the Board itself or in some co-operating body. A board or boards of laymen and physicians should determine that applicants are qualified to meet written and practical tests before they are licensed to practice. Such a board and particularly the laymen will sooner or later inevitably demand that all medical schools shall give such instruction as they claim to give and instruction of such character as will fit students adequately to meet the tests for registration.

After passing the required tests the registrant should be free to adopt whatever methods of treatment may seem best in any instance. The Board should protect the public and the medical profession by appropriate action in cases of alleged carelessness, neglect, malpractice without license, and in other matters of dispute. Protection of the public may lead to suspension or revocation of license. Punishment for criminal acts must necessarily rest with the courts but is there any reason why the Board of Registration should not hear and present evidence and why its findings in criminal cases might not be introduced as evidence? And, conversely, might not the Board hear primarily the evidence in cases of alleged malpractice not of a criminal nature and present its findings to the court if the hearing before the Board proves inconclusive to the litigants?

If these suggestions could be carried out, would not the public interests be served and would not much work be taken off the shoulders of prosecuting officers who are not interested in and are perhaps unfitted for meeting the special problems involved?

Of course, it is recognized that much that is suggested is already done more or less satisfactorily. A clear recognition by physicians of the fact that the Board of Registration is established to protect the public welfare and that it only is to protect physicians from injustice just as other citizens are protected from injustice would help to convince legislators of the justice of our aims.

Will not the co-operation of laymen whether within or outside our Boards of Registration help us to accomplish our aims?

THE MICROSCOPE AND DISEASE

In recent years a considerable if not entirely satisfactory rate of progress has been made in discovering the causes of disease. And in this progress the microscope has played a prominent, perhaps the most prominent part. It has demonstrated beyond peradventure its almost infinite potentialities and possibilities. It is known or shrewdly guessed that in the causation of many diseases, filterable viruses, sometimes termed ultramicroscopic, are factors of the first moment. There is a long list of diseases in men and animals in which filterable viruses are suspected of being a cause, maybe an activating cause, and here it may be interpolated that investigators are getting away from the old notion that there is only one cause of a disease and are taking the eminently more commonsense view that there are several causes probably, but that the action of all causes is required to start the conflagration. The chances are that the filterable virus is the match which sets afire the inflammable materials gathered together in the body.

In any event it has been demonstrated that there is an extremely minute micro-organism which is present in certain diseases and it is a fair presumption to suggest that it is of importance in their causation. Also it has been made obvious that these extremely small parasites can be detected only by means of specially constructed and arranged microscopes. Mr. Bernard, of London, who is collaborating with Dr. Gye in investigating the cause of cancer is credited with being the designer of a microscope capable of showing up infinitely small germs which it would seem will soon be wrongly termed ultramicroscopic. The design of this microscope is rather a question of the manner of the illumination than of increased power. Such a microscope opens an immensely wide field of investigation and arouses great hopes of grappling with disease with greater success than ever before, as although the discovery of the cause of disease does not mean that it will immediately be prevented or cured, it does mean a long step in the right direction mainly in the direction of prevention.

In London during the week ending April 18th the optical Convention was held at the Imperial College of Science and Technology. Mr. Baldwin, the Prime Minister, opened this Convention with a thoughtful address.

He pointed out that it is not only in the defence of a country in war that scientific optics plays its part. He stated as his opinion that we are only at the beginning of the discoveries that will be made to combat more dangerous and lasting foes, disease, cancer for instance, and in working with X-rays and the microscope the aid of scientific optics will be needed, and will no doubt be forthcoming.

All science is dependent in part for its advance upon scientific optics which again in its turn is dependent in a large measure upon the improvement of its glass and instruments. The conquest of disease is very largely dependent on the microscope, without which there can be no penetration to its ultimate causes. The microscope, in fact, is essential to certain phases of discovery, which are believed to be necessary to the conquest of disease. It may be argued that the conquest of disease lies much more largely in prevention than in successful treatment. But although the cause or one of the causes or the exciting cause leads more to the overcoming of disease by prevention than by treatment such a discovery will also aid treatment immensely. It may be concluded then that the microscope is essential to the conquest of disease, and of course the more effective the microscope the more quickly will cause or causes be apt to be detected and the more quickly will the millenium with regard to disease be attained.

A SOURCE OF EMBARRASSMENT

The *Nation's Health*, May, 1926, in an editorial on the subject of popularizing medical knowledge mentions the amount of health information that has been supplied to the general public during the last few years, and comments on the fact that this has not been confined to special health publications, but is general in the daily press. Certainly it is true that the daily newspapers have been doing almost their share in the great work of preventing disease and preserving health. Many of them now have their health columns, and in these health matters of general interest are usually considered sanely and wisely. It is a matter of considerable satisfaction to those enlisted in the service of the public health to know that they have on their side the most powerful agents known in shaping public opinion and in furthering public education.

One statement in this editorial, however, is a source of embarrassment. "All reputable newspapers," according to the text, "have purged their columns of nostrum advertising . . ." The statement is not qualified; it may be taken as conclusive. One of two deductions is allowable. Either *The Nation's Health* has made a misstatement, due, probably, to ignorance of local conditions, or certain highly considered Boston newspapers are not reputable. Since no one would accuse such publications as *The Boston Herald* of being disreputable, the editorial writer of *The Nation's Health* must be in error, for the *Herald* continues to accept and print the most outrageous type of nostrum advertisements.

We are, of course, far too sophisticated in this day and generation to believe that anyone is his brothers' keeper. A certain well known son of Adam dispelled this quixotic ideal several gen-

erations ago. We have been taught that the public loves to be fooled and the public is decidedly getting what it wants. Curiously enough, however, governments, associations and individuals are trying to prevent the public from getting what it wants if it is not good for it. The finer questions of morals are always difficult to decide but it seems to us at least that it is unethical, unsportsmanlike and dishonest to exploit the ignorance of the individual to his detriment. We wish that we could make the business managements of such papers as the *Herald* view these matters as we do, but apparently they are not yet ready to constitute themselves their brothers' keepers.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

CHIPMAN, WALTER WILLIAM, Fellow Royal College of Surgeons, Edinburgh; Professor of Obstetrics and Gynecology, McGill University, Montreal. Page 1013.

LADD, WILLIAM E., M.D. Harvard Medical School 1906; F.A.C.S.; Instructor in Surgery, Medical School of Harvard University and Harvard University Graduate School of Medicine; Associate Surgeon, Children's Hospital. His subject is "Harelip and Cleft Palate," page 1013. His address is 66 Commonwealth Avenue, Boston.

NOYES, IRA H., M.D. Yale University School of Medicine 1908; F.A.C.S.; Surgeon, Department of Gynecology, R. I., and Providence City Hospitals; Assistant Obstetrician, Providence Lying-in Hospital; Consulting Surgeon, Westerly Hospital, Westerly. His subject is "Pelvic Inflammation in Women," page 1022. His address is 210 Benefit Street, Providence, R. I.

CHAMPLIN, JOHN, JR., M.D. Tufts College Medical School 1922; His subject is "The Use of Milk Injections in Pelvic Inflammation," page 1025. His address is Westerly, R. I.

MAGILL, WILLIAM H., M.D. Cornell University Medical College 1903; Surgeon, Gynecological Department, Rhode Island Hospital; Associate Surgeon, Gynecological Department, St. Joseph's Hospital. His subject is "Thermo-therapy in the Treatment of Pelvic Inflammation," page 1027. His address is 116 Waterman St., Providence, R. I.

DAYTON, NEIL A., M.D. Ohio State University 1915; Assistant Superintendent, Wrentham State School; Member, N. E. Society of Psychiatry, American Psychiatric Association, etc. His subject is "Anaerobic Infection: The Process," page 1028. His address is Wrentham State School, Wrentham.

MCLAUGHLIN, ALLAN J., M.D. Detroit College of Medicine 1896; Has been connected with Public Health Service since 1900. He is at present Surgeon-in-Charge of the Public Health Service Hospital at St. Louis, Mo. He writes on "Doctor Kelley, The Health Officer," page 1032.

REID, WILLIAM D., A.B., M.D. Harvard Medical School 1909; Instructor in Cardiology, Boston University School of Medicine; Heart Consultant to Evans' Memorial; Assistant Visiting Physician and Chief of Heart Clinic, Massachusetts Homeopathic Hospital. The subject of his paper is "The Abuse of Rest in Cardiac Therapy," page 1035. His address is 270 Commonwealth Avenue, Boston.

The Massachusetts Medical Society

THE SPRINGFIELD MEETING

GET ready to take two days off for the annual meeting of the Massachusetts Medical Society at the Hotel Kimball, Springfield, June 8 and 9. Bookings at the hotel have been numerous, interest in the program has been shown by physicians in Connecticut and Rhode Island as well as by the Fellows of the Society itself and many want to see the exhibits, both the scientific exhibit and the display of books, instruments and other articles used by the members of our profession, to be shown in the hotel. It is the best time of year, the verdure is fresh, the roads are good, the weather promises to be ideal, the hotel will offer all creature comforts, and the program will cater to the mind. Greatest of all benefits will be the opportunity to rub elbows with your fellows, to find out what manner of men they are, to get acquainted and to form friendships. This can be done to the greatest advantage when a meeting is all under one roof. Therefore let "George" look out for your practice, for he always does it, when requested, fill up with gasoline and start for Springfield. You will feel younger when you get home and the serious cases will worry you less.

ANNUAL MEETING OF THE COUNCIL

THE annual meeting of the Council will be held in the Ball Room of the Hotel Kimball, Springfield, on Tuesday, June 8, 1926, at 5:30 P. M.

BUSINESS

1. Reports of Standing Committees in order of appointment. (See inside front cover of program.)

2. Reports of committees appointed by Council to consider petitions for restoration to the privileges of fellowship. Petitions for restoration, if any, and appointment of committees.

3. Reports of Special Committees appointed by the Council.

4. Election of officers and orator for 1926-27, by ballot.

5. Election of Standing and Special Committees for 1926-27.

6. Appointment of three delegates and three alternates to the House of Delegates, American Medical Association, for two years from June 1, 1926.

7. Incidental business.

WALTER L. BURRAGE, *Secretary.*

Brookline, June 1, 1926.

Councilors are reminded to sign one of the attendance books before the meeting.

LEGISLATIVE NOTE

THE FINAL CANCER BILL—SUBSTITUTE FOR HOUSE BILL 1500

MASSACHUSETTS 1926

SENATE No. 398, as enacted.

AN ACT to promote the prevention and cure of cancer and the extension of resources for its care and treatment.

Whereas, it is important for the protection of the public health that immediate steps be taken for the further prevention of cancer and the cure and treatment of persons afflicted with cancer, therefore this act is hereby declared to be an emergency law, necessary for the immediate preservation of the public health.

SECTION 1. The department of public health, hereinafter called the department, is hereby authorized and directed to formulate a plan for the care and treatment of persons suffering from cancer, with a view to taking any necessary initial steps toward the establishment of necessary hospital facilities for such care and treatment by the construction of new hospital buildings, by the use of existing buildings or by additions to existing buildings. The department shall, from time to time, submit such plan to the governor and council and to the budget commissioner, and shall report its final plan to the general court not later than October fifteenth in the current year, with drafts of such legislation as may be necessary to carry the same into effect, and shall at the same time file copies thereof with the said budget commissioner.

SECTION 2. The department shall establish and organize cancer clinics in such parts of the commonwealth as it may deem most advantageous to the public health, and shall conduct such clinics with or without coöperation on the part of municipalities, local physicians and other agencies.

SECTION 3. Subject to appropriation, the department may expend during the current fiscal year for the purposes of sections one and two a sum not exceeding fifty thousand dollars.

SECTION 4. For the purpose of providing immediate care and treatment for persons suffering from cancer, the department is hereby authorized to make use of the Norfolk state hospital and may suitably condition and equip the same. Subject to appropriation there may be expended for the purposes of this section during the current fiscal year a sum not exceeding one hundred thousand dollars.

Almost at the ending of the sessions the bill was amended reducing the appropriation for clinics to $15,000 and appropriating $100,000 for converting the Norfolk State Hospital into a hospital for the treatment of cancer cases.

MISCELLANY

THE SEMI ANNUAL MEETING OF THE NEW HAMPSHIRE SURGICAL CLUB

THE 28th semi-annual meeting of the New Hampshire Surgical Club was held at Nashua, N. H., April the 27th, 1926. Beginning at 10:00 A. M. there was an operative clinic conducted at St. Joseph's Hospital. Dr. Frederick W. Johnson, Chief of the Gynecological service at the Carney Hospital, Boston, Mass., performed one of his classical interposition operations for the cure of prolapsus uteri, demonstrating the various steps of the procedure. Dr. Donald Munro of Boston did an excision of the gasserian ganglion for trifacial neuralgia. Dr. Arthur W. Allen of Boston did an inguinal hernioplasty under local anesthesia.

The clinic was well attended and much appreciated. Lunch was served by the Surgical Club at the Hospital, following which an inspection was made of the new Memorial Hospital of Nashua which represents the latest idea in hospital construction.

At 2:00 P. M. the afternoon program took place at the new nurses' Home and was as follows: Three Causes of Urinary Frequency, John P. Bowler, M.D., Hanover, N. H., lantern slide illustrations. Dr. Bowler presented the subject in a very masterly way laying emphasis on the great value of the cystoscope and roentgenogram in the diagnosis of these conditions and urging the serious consideration and investigation of the symptom Urinary Frequency. This paper was ably discussed by Dr. Elmer J. Brown, of Manchester, N. H., and Dr. John F. Gile, of Hanover, N. H.

The Value of Cholecystography was the subject presented by Dr. F. S. Eveleth of Concord, N. H., illustrated by lantern slides, who laid emphasis upon the great value of this examination since the use of Sodium-Tetraiodophenolphthalein introduced by Graham. Dr. Eveleth is using the oral administration of the dye and

believes that by this method his percentage of errors is not over 10% as compared with 65% under the old method of gall bladder examination. He spoke of this new procedure of gall bladder examination as one of the great advances in this field of diagnosis. The discussion was opened by Dr. A. S. Merrill of the Elliot Hospital, Manchester, N. H., formerly of the Massachusetts General Hospital of Boston, Mass. Dr. Merrill said that with the Sodium Tetraiodophenolphthalein in Cholecystography it was possible in a high percentage of cases to recognize cholecystitis without stones as well as cholecystitis with stones and emphasized the point that cholecystitis without stones is much more common condition that cholecystitis with stones, as the latter probably represents a cholecystitis of fairly long duration. The paper was further discussed by Dr. A. F. Wheat of Manchester, N. H., Dr. David W. Parker of Manchester, N. H., Dr. Geo. C. Wilkins of Manchester, N. H., Dr. Stillman G. Davis of Nashua, N. H.

The last paper End Results in the Interpositional Operation for the cure of Prolapsus Uteri, was presented by Dr. Frederick W. Johnson of Boston, Mass., illustrating steps of the operation by lantern slides. Dr. Johnson in his usual clear cut and careful manner reviewed the large series of cases of interpositional operations done by him between the years of 1909 and 1924 reporting a very high percentage of absolute cures, 2 absolute failures and a few cases that were not entirely satisfactory. His mortality was nil. In the discussion opened by Dr. Wm. E. Reed of Nashua, N. H., former House Officer of Dr. Johnson, he paid a very high tribute to his former chief and reported a case of pregnancy following interposition operation with normal delivery. Dr. E. M. Miller of Woodsville, N. H., followed with a fine discussion in which he commended the interposition operation as ideal for prolapsus uteri in suitable cases. He said that while abroad he saw it used in European clinics where it was highly recommended. Dr. Emery Fitch of Claremont, N. H., Dr. A. F. Wheat of Manchester, N. H., Dr. J. W. Jameson of Concord, N. H., Dr. John P. Bowler of Hanover, N. H., continued the discussion. In his closing remarks Dr. Johnson reported two cases of pregnancy following interposition operation but said that he did not recommend the operation except under circumstances where pregnancy would not subsequently occur.

Dr. Halsey B. Loder of Boston was to have assisted at the morning clinic as well as present a paper in the afternoon but unfortunately he was taken suddenly ill the day before with pneumonia, and at the time of the meeting was critically ill at the Memorial Hospital, Nashua, N. H.

Dr. James Woodman of Franklin, N. H., president of the New Hampshire Surgical Club presided. There were about one hundred and twenty-five members and guests present. The literary program was arranged by the officers of the Club, the clinic and the local arrangements were in charge of the Nashua members, Dr. C. E. Congdon, chairman.

Dr. Congdon and the Nashua members deserve high praise for their careful attention to details and their very cordial hospitality. Thanks and appreciation are extended to the efficient and whole hearted coöperation of the St. Joseph's Hospital and the Memorial Hospital.

The annual meeting of the New Hampshire Surgical Club will be held at Hanover, N. H., this fall.

RECENT DEATH

SAUNDERS—Dr. Joseph Henry Saunders, a former Fellow of the Massachusetts Medical Society, a practitioner of Brookline, died in Dorchester, May 14, 1926. He was born in Haverhill, August 4, 1872, the son of Oliver H. and Elizabeth McKey, took an A.B. at Tufts College and an M.D. at Harvard Medical School in 1900. After serving as house officer at the Boston City Hospital he was assistant in clinical medicine in the Tufts College Medical School and visiting physician to the Boston Dispensary and to the Tufts Dispensary.

His health failed in 1913 and he was obliged to give up practice later.

He is survived by his widow, who was Caroline Sibley of Spencer, and by a daughter.

NEWS ITEM

A SERUM FOR TREATING ERYSIPELAS—Dr. Konrad E. Birkhang, of the Department of Bacteriology, School of Medicine and Dentistry, University of Rochester, N. Y., has developed a serum for the treatment of erysipelas which, it is reported, has proved effective in 60 cases. The serum is still in the experimental stage, but results seem to indicate that certain modifications designed to obviate the effect of large doses warrant expectation of a valuable addition to the resources of medicine.

REPORTS AND NOTICES OF MEETINGS

THE MASSACHUSETTS ASSOCIATION OF MEDICAL MILK COMMISSIONS

There will be a meeting of the Massachusetts Association of Medical Milk Commissions at the Hotel Kimball, Springfield, Massachusetts, on Tuesday, June 8, 1926, at 1 P. M. Papers will be read by Dr. John Lovett Morse, Dr. J. P. Bill, Mr. R. N. McLellan, and Dr. Richard S. Eustis.

George H. Bigelow, M.D., *President*
Richard S. Eustis, M.D., *Secretary.*